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(57) Abstract

An electronic library system comprising an electronic bookstore storing a multiplicity of electronic books, and a plurality of personal electronic libraries associated with a corresponding plurality of workstations, each individual personal electronic library comprising a library builder operative to download selected ones from among the multiplicity of electronic books in the electronic bookstore into the individual personal electronic library, and a library research engine operative to search a plurality of books in the individual personal electronic library.

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DIGITAL PUBLISHING AND DYNAMIC INTEGRATION

The present invention relates to apparatus and methods for referencing information.

BACKGROUND OF THE INVENTION

An article entitled "Westlaw White Paper Information on Your Terms" describes considerations in providing information, such as information from the Westlaw database, on the user's own terms. The article appeared on Westlaw's Internet site and is marked with a copyright date of 1997.

Microsoft markets a CD-ROM reference library entitled "Microsoft Encarta Reference Suite 98" which allows a user thereof to "learn proper research methods".

1stBooks Library, posted on the Internet and bearing a 1997 copyright date, allows a user to download virtual books directly to the user's computer. The Library has a Search by Keyword feature and a Browse by Category feature in which all books matching the selected category or categories are displayed.

Amazon.com! is posted on the Internet and is self-described as a bookstore.

The disclosures of all publications mentioned in the specification and of the publications cited therein are hereby incorporated by reference.

SUMMARY OF THE INVENTION

The present invention is in the general field of reference software, more specifically in the field of multimedia reference software. More particularly the present invention relates a multimedia reference software

product which, provides a method and system for building and maintaining a dynamic library of books, provides a method to incorporate more media items, and which allows for efficient queries to be performed across any number of books in real-time.

Multimedia reference software products are becoming more and more numerous as home computers are becoming a standard means by which to perform research. It is common for multimedia reference software products to contain a pre-defined number of books to perform research on, and a pre-defined number of media items that can be viewed.

One problem, which exists in such reference products, is that the scope of information that is available to perform a query on is limited due to a finite number of information in the product. Some products allow for some sort of Internet connection to be available to allow for more search results, but the method for performing these queries, including the sorting and display of these results, is not organized or efficient.

It should therefore be apparent that a need exists for a multimedia reference software product which provides a method and system to dynamically add and remove books, update these books, and add new media items. There is also a need for this product to provide a method and system for efficient queries to be performed across books and displayed.

Preferably, the system of the present invention includes the following features:

* The ability to support the researching of any variable number of books that exists in the user's system. These books exist in a predefined digital preferably object oriented format as illustrated in Fig. 4. The formatted digital books are the input data for the library research engine 150 of Fig. 1. The library research engine 150 is typically not dependent on any particular

book. It can service any book in the digital format.

* It is another object of the present invention to provide a method and system by which data is presented from a multiple number of books in real-time, and the results merged. Data can include query results and media items.

* It is another object of the present invention to provide a method and system to add new books to the end user library via the Internet or CD-ROM. These books may include multi media items.

* It is yet another object of the present invention to provide a method and system to automatically update books via the Internet.

There is thus provided, in accordance with a preferred embodiment of the present invention, an electronic library system including an electronic bookstore storing a multiplicity of electronic books, and a plurality of personal electronic libraries associated with a corresponding plurality of workstations, each individual personal electronic library including a library builder operative to download selected ones from among the multiplicity of electronic books in the electronic bookstore into the individual personal electronic library, and a library research engine operative to search a plurality of books in the individual personal electronic library.

Further in accordance with a preferred embodiment of the present invention, the library research engine is operative to accept a user's definition of a subset of books in the user's personal electronic library and to search only the subset of books.

Also provided, in accordance with a preferred embodiment of the present invention, is an electronic information reservoir including a multiplicity of books each of which is stored as a separate object, and a research engine including a book searcher operative to search individual ones of the multiplicity of books and

to generate a book search output, and a booksearch merger operative to merge book search outputs of a plurality of searches performed by the book searcher on a plurality of user-selected books from among the multiplicity of books, thereby to generate a global search output.

Also provided, in accordance with another preferred embodiment of the present invention, is an electronic library system including an electronic bookstore storing a multiplicity of electronic books, and a plurality of personal electronic libraries associated with a corresponding plurality of workstations, each individual personal electronic library including a library builder operative to download selected ones from among the multiplicity of electronic books in the electronic bookstore into the individual personal electronic library, and a book updater operative to perform an automatic background update of at least a portion of at least one electronic book in the individual personal electronic library which has become outdated.

Further in accordance with a preferred embodiment of the present invention, each electronic book is organized as a hierarchy of book portions each including a meaningful portion of the contents of an electronic book and wherein the book updater, when updating an electronic book, is operative to update only those portions of the electronic book which have become outdated.

Still further in accordance with a preferred embodiment of the present invention, the system also includes a network site which posts an update of at least a portion of at least one electronic book which has become outdated and the book updater is operative to automatically dial the network site.

Also provided, in accordance with another preferred embodiment of the present invention, is an electronic book storage system including a first plurality of electronic books of a first content type, and a

second plurality of electronic books of a second content type, wherein all of the first and second pluralities of electronic books are organized in a single hierarchical format such that a single hierarchical level within the single hierarchical format stores meaningful chunks of information of the first content type, each chunk including a meaningful portion of an individual one of the first plurality of electronic books of a first content type, and meaningful chunks of information of the second content type, each chunk including a meaningful portion of an individual one of the second plurality of electronic books of a second content type.

Further in accordance with a preferred embodiment of the present invention, the first and pluralities of electronic books include books of any of the following content types: cookbooks, road atlases, dictionaries, encyclopedias, telephone books, picture books, novels, catalogs, instruction manuals, newspapers, and newsmagazines.

Also provided, in accordance with another preferred embodiment of the present invention, is a multimedia book generating system including a multimedia database storing a multiplicity of multimedia elements, and a digital book generator operative to generate a digital book including text and at least one link from a location in the text to at least one of the multiplicity of multimedia elements in the multimedia database.

Further provided, in accordance with still another preferred embodiment of the present invention, is an electronic research method including storing a multiplicity of electronic books in an electronic bookstore, and associating a plurality of personal electronic libraries with a corresponding plurality of workstations, including downloading selected ones from among the multiplicity of electronic books in the electronic bookstore into the individual personal electronic library, and

searching a plurality of books in the individual personal electronic library.

Further in accordance with a preferred embodiment of the present invention, the searching step includes searching all books in the individual personal electronic library in a single search operation.

Still further in accordance with a preferred embodiment of the present invention, the searching step includes accepting a user's definition of a subset of books in the user's personal electronic library and searching only the subset of books.

Also provided, in accordance with a preferred embodiment of the present invention, is a method for searching through electronic information, the method including storing a multiplicity of books each as a separate object, and performing an electronic researching operation including searching individual ones of the multiplicity of books and generating a book search output, and merging book search outputs of a plurality of searches performed by the book searcher on a plurality of user-selected books from among the multiplicity of books, thereby to generate a global search output.

Further provided, in accordance with yet another preferred embodiment of the present invention, is an electronic library updating method including storing a multiplicity of electronic books in an electronic bookstore, and associating a plurality of personal electronic libraries with a corresponding plurality of workstations, including, for each individual personal electronic library, downloading selected ones from among the multiplicity of electronic books in the electronic bookstore into the individual personal electronic library, and performing an automatic background update of at least a portion of at least one electronic book in the individual personal electronic library which has become outdated.

Further in accordance with a preferred embodi-

ment of the present invention, each electronic book is organized as a hierarchy of book portions each including a meaningful portion of the contents of an electronic book and wherein the update performing step, when updating an electronic book, includes updating only those portions of the electronic book which have become outdated.

Further in accordance with a preferred embodiment of the present invention, the method also includes posting, on a network site, an update of at least a portion of at least one electronic book which has become outdated and wherein the update performing step includes automatically dialing the network site.

Also provided, in accordance with another preferred embodiment of the present invention, is a method for storing electronic books, the method including storing a first plurality of electronic books of a first content type, and storing a second plurality of electronic books of a second content type, wherein the stored information is organized in a single hierarchical format such that a single hierarchical level within the single hierarchical format stores meaningful chunks of information of the first content type, each chunk including a meaningful portion of an individual one of the first plurality of electronic books of a first content type and meaningful chunks of information of the second content type, each chunk including a meaningful portion of an individual one of the second plurality of electronic books of a second content type.

Further in accordance with a preferred embodiment of the present invention, the first and pluralities of electronic books include books of any of the following content types: cookbooks, road atlases, dictionaries, encyclopedias, telephone books, picture books, novels, catalogs, instruction manuals, newspapers, and newsmagazines.

Also provided, in accordance with a preferred embodiment of the present invention, is a method for multimedia book generation, the method including storing a multiplicity of multimedia items in a multimedia database, and generating a digital book including text and at least one link from a location in the text to at least one of the multiplicity of multimedia elements in the multimedia database.

Preferably, the system of the present invention includes a Library Builder operative to add additional content at any time without recompiling the index.

Preferably, the system provides a Book Integrity feature whereby books remain modular objects even after they are integrated into a user's library.

Preferably, the system is operative to perform dynamic media retrieval such that linked media can sit anywhere (including CD, hard drive and Internet) and be displayed transparently to the end user.

The system typically provides an Auto-update feature which updates all content modularly, typically totally in the background.

An optional Book Preview feature allows a book cover, specification and other contents to be viewed both on and off line.

The system of the present invention preferably provides a plurality of templates each of which describes the behavior of a class of book categories. The template properties typically include page presentation as well as types of queries. For example, a cookbook template may support ingredient queries and may have a page layout in which ingredients and methods are displayed in different fonts and styles.

The system preferably includes a template sensor which automatically detects a template associated with books and changes the display on the fly without having to restart the application.

One objective of a preferred embodiment of the system of the present invention is to provide for the consumer a dynamic library of books, and a strong search engine with the capability of searching for specific items within any or all of the books in the library.

The present invention also provides a method for publishers to turn their regular printed books into electronic books, which can then be added to a digital library.

The original digital library comprises reference type books. The present invention permits users to view electronic, multimedia books in their own, customized, personal library. In the first version the library is only be able to contain books that reside on the user's local hard drive or on an original DVD disk or CD. Future versions are to add support for books that are located on the Internet. Users are able to search within their library to locate the information they want.

The structure of each book is defined by each publisher. This means that the publisher decides how to divide up the book's contents, including the organization of text and the addition of multimedia items.

The User system is preferably able to create and manage a personal library and to enable a user to get to desired information quickly.

An optional Publisher's tool (Fig. 63) provides the ability for publishers to create electronic books and allows publishers to add multimedia Elements to their books.

The user's system may be delivered on a DVD disk or CD. On this DVD disk or CD there may be provided an added value item such as an encyclopedia and/or an atlas or dictionary. Additional books are typically available from the Internet, or CD-ROM's.

The DVD disk or CD contains a media database 170 that is used both by the original set of books and by

additional books that are created using the Publisher's tool (Fig. 63).

The present invention is based on the typical research process. When researching a topic the user selects a set of books to research. The user then searches within this set of books and notes the articles that interest him. The user then reviews more carefully the selected articles keeping the articles that most interest him, and then makes his report.

The system of the present invention models the typical research process. There are preferably three main parts in the system of the present invention. They are the Library, the Research Center and the Binder. The Library allows the user to search for desired books. The Research Center, which is the main part of the program, contains many ways for the user to search within his chosen books for the information that he wants. The user then adds any desired items to the Binder, and then he can go to the Binder view and concentrate more carefully on his chosen items.

In the Library the user has the choice of working in a standard Windows environment, or he can choose to work with a rich, full window, graphical interface. In the Library the user can organize his library. He is able to group books together in bookshelves as desired. An important part of the functionality of this library is that the user is able to choose his own set of books in the library that he wants to work at any time. This set of books selected in the library forms the basis for his research in the Research Center.

In the Research Center the user searches the books in his library to locate those articles and media items that interest him. The Research Center has two main components, a Browser List and a Display Area.

The Browser List is used to browse the book titles and select individual articles or media for dis-

play. The user is also be able to find any information that he wants in searching by keyword, full text, topic or media. After activating a query only those articles or media that result are displayed. Selecting an article or media in the Browser List causes it to be displayed in the Display Area. As the user finds items that he would like to save for further viewing, he is able to press the Add to Binder button, which adds the item to a list to be opened up in the Binder.

The Binder contains those books, chapters, articles or multimedia items that the user chooses to Add to Binder. The user is easily able to switch between the Binder and the other modes in the Research Center, allowing the quick addition of new items to a binder.

The system of the present invention supports a variety of templates. The templates allow customization of the system's engine for different types of books. The templates can specify, among other things, the layout of the articles, the look of the Display Area, the topics for the book and query options. Templates are discussed in more detail hereinbelow.

FORMAT FOR DIGITAL BOOKS

Optionally, the structure of each book is completely definable by the publisher using the publisher's tool of Fig. 63. This means that publishers can divide a book into sections, chapters, subchapters and so on if so desired. Alternatively a book can be one flat list of articles. Optionally, the publisher also decides which if any multimedia items are to be added to his book, and to where they are placed in the book. The publisher preferably is able to choose a format that represents the information in the most meaningful way.

The Book Divisions: A general structure exists for the divisions of a book that the publisher can choose

to use. The book is at the top level (the root of the tree). All publishers have this "book" level, but what is below this level is what the publisher defines. The terms for these different divisions are Media Groups 204, Media Elements 202, Media Back Matter 203 and Associated Media 205.

Media Data Objects 202, 203 and 204 are used to give the Book its hierarchical structure. They can be sections, parts, chapters or sub-chapters in a book, depending on what is relevant for each book. The Media Data objects may have displayable data attached to them, such as text and/or other types of media, which can be viewed in the Display Area (in the main Media Window). Or a media data object may just be a section to divide the book up with no displayable data attached to it, such as a chapter title that has nothing to display in the Display Area.

Multimedia data may be embedded in Media Data Objects 202, 203 and 204 of type text. The embedded media items are usually also Associated Media Items 205 in their own right. The publisher may have embedded media that is also an Associated Media Item 205 for something like a formula.

Associated Media Items 205 are the multimedia or text elements in the book that come to elaborate on the Media Data Object 202, 203 or 204. Every Associated Media Item 205 is directly connected to its parent Media Data Object, and can be displayed either by choosing it in the Browser List or by choosing it from the toolbar in its parent Media Element window.

Associated Media Items 205 typically have displayable data attached to it (such as text, pictures, videos, sounds, animations etc.).

An example of an associated media item is picture of a flag of Canada, which has as its parent media element an article about Canada.

Media Objects: Collectively, Media Containers 201, Media Elements 202, Media Groups 204, Media Back Matter 203 and Associated Media Items 205 are known as Media Objects. Fig. 5 illustrates other types of media objects, comprising data presented and processed by the system.

The system of the present invention may be multilingual. Multilingual versions may have a single language user interface, defined at startup but are able to display books in multiple languages simultaneously. In order to easily flow into a multilingual version the design and programming are based on the UNICODE character set to support multilingual operation.

The system of the present invention preferably allows a set of users to communicate while collaborating on a research project.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood and appreciated from the following detailed description, taken in conjunction with the drawings in which:

Fig. 1 is a simplified functional block diagram of a digital book processing system constructed and operative in accordance with a preferred embodiment of the present invention;

Fig. 2 is a diagram of the functional layers of the library research engine of Fig. 1;

Fig. 3 is a functional block diagram of the data layer of Fig. 2;

Fig. 4 is a diagram illustrating a representation of a book as a hierarchy of digital media objects;

Fig. 5A is a diagram of a representation of a user's briefcase as a hierarchy of digital data objects;

Fig. 5B is a diagram of a representation of a user's bookcase as a hierarchy of digital data objects;

Fig. 5C is a diagram of a representation of the query hierarchical ID table of Fig. 6 as a hierarchy of digital data objects;

Fig. 6 is a diagram illustrating dataflow between tables stored in the system of Fig. 1,

Fig. 7 is a diagram illustrating dataflow between the data layer of Fig. 2, and the GUI/navigator interface of Fig. 2, via the navigator layer of Fig. 2;

Fig. 8 is a diagram illustrating navigators and containers interacting in accordance with a preferred embodiment of the present invention;

Fig. 9 is a diagram illustrating a merging process performed by the navigator level of Fig. 2, in accordance with a preferred embodiment of the present invention;

Figs. 10 - 60 are screen displays generated by a preferred embodiment of the present invention;

Figs. 61 - 62, taken together, form a simplified flowchart illustration of an example of a work-session using the system of the present invention;

Fig. 63 is a flowchart illustration of a preferred method of operation for a publisher's tool constructed and operative in accordance with a preferred embodiment of the present invention;

Fig. 64 is a screen display of the main contents of the book entitled "Treating Asthma, Allergies, and Food Sensitivities" by Alan Pressman and Herbert D. Goodman, Philip Lief Group, Berkeley, 1997, to which tables in the specification pertain;

Fig. 65 is a simplified block diagram illustration of the book creation tool of Fig. 1; and

Fig. 66 is a simplified flowchart illustration of a preferred method of operation for the book compiler of Fig. 65.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Fig. 1 is a simplified functional block diagram of a digital book processing system constructed and operative in accordance with a preferred embodiment of the present invention. The top-level functional block diagram of Fig. 1 includes the following elements:

The system receives, from an external electronic medium, book data 180 which may include multimedia data and which may be provided in any suitable format such as HTML format. A book creation tool 120 then transforms the book data into a uniform hierarchical format described in detail below. The output of the book creation tool 120 typically comprises uniformly hierarchically formatted book data 100, as described in detail below with reference to Figs. 65 - 66.

The digital book 100 may be delivered to users by any suitable means such as by posting on a network web server such as an Internet site 130. Alternatively, the uniformly hierarchically formatted books may be physically delivered to users, e.g. by conventional retail sale in digital form, such as DVD form and/or in the form of a CD-ROM 50 as shown.

An end-user system 135 typically includes a library database 160 and a book accessor and manipulator 150, also termed herein "the library research engine". According to one embodiment of the present invention, books are downloaded from the Internet 130 to the library database 160 in the user system 135. Alternatively, however, the user system 135 may remotely access the books via the Internet in which case the library database 160 may reside on an Internet server or may even be omitted.

Optionally, a universal media database 170 is provided which stores a multiplicity of multimedia elements 110 such as photographs, videos, sounds and anima-

tions. These multimedia elements are linked to a plurality of books by the book creation tool 120. The universal media database may reside either locally or remotely, on an Internet server, or portions of the database may reside locally and other portions or the database in its entirety may reside on the Internet server. Additionally or alternatively, each book may be linked to its own individual media database (not shown). A particular advantage of provision of a universal media database is reduction of costs for preparing digital books since preparation of the multimedia components of a book is frequently a very costly component of the preparation process as a whole. Another advantage is that multimedia elements which are frequently used by a reservoir of books may be stored centrally to enable reuse in conjunction with more than one book, or in conjunction with more than one location in the same book, thereby reducing the total size of the reservoir.

The media database 170 stores a media database table 460 (Fig. 6) and also knowledge of how to access and use the data in table 460.

The media database 170 is created by a media database creation tool 190 which inputs multimedia elements 110 from external sources, using conventional methods. Alternatively, a commercially available media database may be employed which may be created using any off-the-shelf database package such as Oracle (marketed by Corporate HQ 500 Oracle Parkway Redwood Shores CA 94065) or Jasmin (marketed by Computer Associates International Inc., One Computer Associates Plaza, Islandia NY). If this is the case, the media is typically converted into, and stored in, a format which the library research engine 150 can understand.

A preferred embodiment of the media database 170 is now described:

Preferably, each individual digital book does

not contain any media in its own right. Instead each book retrieves its media from a centralized place on the DVD disk or CD. This 'database' contains a very wide variety of media that may be used by many different digital books. Each digital book accesses media via a Unique ID that recognizes the media sitting on the DVD.

The following processes typically take place:

a. Books 100 are prepared in the digital format through a Book Creation tool 120 by taking HTML pages 180 and integrating search data and multimedia into the book.

b. Media 110 are compressed, organized and packaged into a Media Database 170 using a Media Database Creation Tool 190.

c. The digital book is supplied via the Internet 130 or CD-ROM 140 to end-users.

d. The library research engine 150 has the ability to download books from the Internet. Th engine 150 accesses, from a DVD/CD-ROM and/or the user hard disk, a set of books to form a personal library 160.

e. Multimedia associated with books reside on the user's DVD or CD-ROM in a Media Database 170. If not there then the engine 150 goes to a predefined site on the Internet 130 to find multimedia.

A preferred embodiment of Media Database 170 (Figs. 1 and 3) is now described. The Media Database resides on the main DVD disk or CD along with the digital book Viewer, and contains thousands of various multimedia elements that can be displayed using the digital book viewer. The multimedia items are of a rich variety and high quality. The type of multimedia elements which are included here include animations, flags, maps, media albums/slide shows, music, photos, speeches and videos. When the publisher creates a book he is able to attach any item from the media database to any item in the book.

The publisher can choose to include as many multimedia items as he would like to his book.

Preferably, Media Elements 202 and Associated Media Items 205 that are of multimedia nature are not actual media but point to the media which may be in the overall media database on the DVD or CD or may be in a media database that is particular to the book. Several Media Elements 202 and/or Associated Media Items 205 may point to the same picture, video, etc. The idea here is to save disk space and downloading time from the Internet, since the user already has all of the multimedia located on his local system.

Videos are stored in separate files with the suffix altered. Optionally, the system allows publishers to append media to the overall media database for use in several of their books or by other publishers.

A preferred embodiment of the user's system 135 of Fig. 1 is now described.

The system of the present invention supports a dynamic library. This means that the user chooses which books he wants to have in his library. Books may be added or removed from this library, and a user can organize his library using shelves. A user could have individual shelves for each member of his family, or a separate shelf set aside exclusively for cookbooks.

As mentioned above, there are both a standard display of the library and a graphical display. When something is altered in one of the views it is automatically adjusted in the other view.

At any time the user has a set of active books, called the "Research Desk", which are the books that appear in the Research Center to work with. This means that the user can choose to work with all of the books in his library at a given time, or he can choose to work only with a certain shelf of books or a combination of books from different shelves. All of the books chosen,

whether they are from a set shelf, or made up of a custom set of books, appear in the "Research Desk" list. These books appear in the Browser List in the Research Center.

When the user closes the digital book Viewer, there is a user option allowing him to save the books that he has chosen to be in the Research Desk so that they reappear the next time he opens up the system.

When the user first installs the system of the present invention, all of the books in his library appear on the "Shelve Book" list. The user then has two options. The first option is to have the librarian shelve a new book, which places it on a pre-defined shelf. The second option is to choose a shelf to place the book on.

The functions of the library regarding books 160 preferably include:

Adding (Purchasing) Books: The user has the ability to add books from the following sources: Internet, and/or CD-ROM/DVD. All books that are added are loaded onto the user's local hard disk. Alternatively, books may be physically located at a remote site. Books can be added in the standard library dialog box by clicking on the "Add Book" button. A dialog box appears asking the user whether he wants to add a book from a CD/DVD or from the Internet. In following the directions the book can be added. Books can also be added from the File menu on the top of the program.

Deleting Books: The user is able to remove books from the library that are no longer being used. Deleting a book deletes all the associated data from the hard disk. If the user has loaded the book from a CD-ROM he may re-add the book at a later time. If the user has downloaded the book from the Internet then the book would have to be re-downloaded if the user wants to get back the book.

Books can be removed in the standard library

dialog box by clicking on the "Delete Book" button. A dialog box appears asking the user which book he would like to delete from his library.

There is a strong warning for the user before he permanently deletes the book, reminding the user that once the book is deleted from his library he cannot get it back (unless the user has a CD of the book that he can reload if needed). Books can also be deleted from the File menu on the top of the program.

Shelving Books: When the user adds a new book to the library that book is preferably placed on a shelf. If there are new books that need to be shelved, the "Shelve Books" button is available. In addition to new books, any other unshelved books appear in this list. These are books that were once shelved but the user at one point removed them from all of the shelves. There is a way to identify which of these books are new (for now this may be having the word New in brackets next to the name of the book. If there are no new books or other unshelved books to be shelved then the "Shelve Books" button is disabled.

When the user has new books to be shelved he has the choice to have the librarian put the book on a pre-defined shelf (preferably defined by the Publisher's Tool of Fig. 63) or he can choose a shelf to place the book on. If the librarian shelves the book and the default shelf for that book does not exist yet in the library, then that shelf is automatically created and the new book is placed on it. If the user wants to shelve the book himself then he can either place the book on a pre-existing shelf in the library, or he can create a new shelf to put the book on.

Here in the standard dialog box the user can choose a book from the list on the left and either:

1. Click on the "Librarian Shelve Book"
2. Choose a shelf from the existing list of

shelves and click on the "Shelve" button

3. Click on the "New Shelf" button and create a new shelf, and then choose that shelf in the Shelf list and click on the "Shelve" button. The New Shelf button brings up the Shelf Properties dialog box allowing the user to name the new shelf and write any desired information about that shelf.

Copying and Moving Books Within the Library: Unlike in a real library, in the digital library of the present invention, the user can copy a book from one shelf to another shelf, or from a shelf to the Research Desk.

Copying to the Research Desk

Copying to another Shelf: In the standard library dialog box the user can choose to view the books that he would like to copy either by "Shelves" or by "Books". Viewing by "Shelves" allows the user to see which shelf or shelves a book resides on. It also allows the user to copy a whole shelf of books over the Research Desk or to another shelf at one time. Within a shelf the books are listed in alphabetical order. Viewing by "Books" allows the user to see a straight alphabetical list of all of the books in his library. This can be helpful if the user wants to copy a book but does not know which shelf it resides on. There could be books in this list that are in the library but have not been placed on a shelf yet. Any books that have not been placed on a shelf are listed in the "Shelve Books" list.

To put a book on a different shelf the user can choose a book (or multiple books or a shelf) and press on the "Copy" button or on the "Move" button to the other shelf.

To place a book on the Research Desk the user can choose a book (or multiple books or a shelf) and press on the "Copy" button. If the Research Desk tab is selected then the move button is disabled, since a book

cannot be moved from a shelf to the research desk, it can only be copied to there.

Sorting/Searching for Books: When choosing which books the user would like to work with (place on his Research Desk), the user is able to perform a search on the books in his library to find the books that meet certain criteria. Then he could choose which of these books he wants to work with.

When purchasing new books the user is optionally able to search for any compatible books which meet certain criteria before purchasing the books to add to his personal library.

Leasing Books: Optionally, the user is able to temporarily add new books to the library by leasing them. This is done through the Internet.

There is preferably a visual indication when a lease is close to expiration, allowing the user to decide whether to renew it or not. This feature is particularly suitable for embodiments in which the books do not reside locally on the user's disk but can physically remain on the Internet.

Remote Access of Books: This feature permits users to add books to the library that do not reside on the local machine, such as a book on the Internet or on an external drive. In this case the book would never be downloaded to the user's hard drive, but the user would be able to view the book in the system's Viewer.

Such a feature is especially useful when supporting Network Computers, since the local machine does not contain a hard disk.

Updating Books/Articles in the Library: The user is able to update the information in his library as new updates become available.

When an update is available there is a visual indication, so the user knows it is available. There may be an option for updates to occur automatically, without

the user having to choose them each time they are available.

Book Properties: Optionally, the user is able to view certain properties of a book such as: the book cover, a short description of the book, the publisher, the date of publication, copyright information.

The user is optionally able to back up a book to a zip drive.

A preferred embodiment of the bookcase 602 of Fig. 3 is now described. When the user first adds a book to his library he has the choice of either having the librarian place the book on a shelf or he can place the book on a shelf that he chooses. If the user has the librarian place the book on a shelf then that book gets placed on a pre-defined shelf, which was preferably defined in the Publisher's Tool (Fig. 63). If the user would like to choose a shelf for the book then he can either place it on an existing shelf or create a new shelf to put it on.

Preferred functions of a shelf are listed below. Most of the functions of a shelf are performed in the "Book Shelves" tab.

In the Shelf tab the user can choose to view any of the previously created shelves from the drop down list box of shelves. When the user chooses a shelf then all of the books that reside on that shelf appear in the list box below.

New Shelf: A new shelf can be added to the bookcase by clicking on the "New Shelf" button. For example if the user is working on a term paper then he could create a new bookshelf called "Stephen's Term Paper", and copy into that bookcase only those books that he needs for his term paper.

When the user creates a new bookshelf a small dialog box appears allowing him to name the bookshelf, and type in a description of that bookshelf if desired.

The user can go back to this box at any time and alter the information in it by choosing the bookshelf and clicking on the "Shelf Properties" button.

When the user adds books to a new shelf they are actually books that are copied from another shelf. Books therefore can appear on more than one shelf at a time.

Delete Shelf: The user can delete a shelf by clicking on the "Delete Shelf" button and choosing a shelf to delete. If the user chooses to delete a shelf, and there is a book or books on that shelf which do not reside on any other shelf, then those books would appear on the "Shelve Books" list, and that button is available.

Remove a Book From a Shelf: The user can select a book or a number of books in the currently displayed shelf and remove them from that shelf using the "Remove Book" button.

The term "Research Desk" refers to the collection of all active books and is represented in the screen display of Fig. 41. The "Research Desk" list contains all of the active books that appear in the Browser List of the Research Center. The books in this list can be all of the books in one shelf, or a combination of books from different shelves.

Add Book(s): The user can add a single book to the "Research Desk" list, or he can choose a whole bookcase and add all of its books to this list. In the standard library dialog box the user can choose a book from the shelves/books list on the left and click on the "Copy" button to add it to the "Research Desk" list.

Remove Book(s): The user can remove a single book from the "Research Desk" list, or he can remove all of the books from this list at one time. In the standard library he can click on one or more books and click the "Remove Book" button below.

Save As Shelf: The user is able to save all of

the books in his current "Research Desk" list as a new shelf.In the standard library he can click on the "Save As Shelf" button to create a new bookshelf. He then gets the Shelf Properties dialog box displayed above allowing him to name the shelf and add a description to it.

Reference is now made to Fig. 2 which is a diagram of the functional layers of the library research engine 150 of Fig. 1.

The library research engine 150 is the socket that displays the books that exist in the user's system. It is divided into five layers. Within each of these layers exist sets of objects that interact with each other.

These layers preferably comprise the following:

Database Wrapper 210: The Database wrapper is a very thin layer that hides the actual database implementation from the rest of the program. Using this data structure makes it possible to change the data storage methodology to other technologies in the future. It is also possible to have different books use different database technologies.

Database layer 211: The database layer 211, also termed herein "the data layer", is the layer that manages all the raw elements of any digital book in the system. Its aim is to supply requested data to higher layers. This requested data can be, but is not limited to, any of the following: media from the media database 170, HTML text 180 (Fig. 1), digital books from the library 160; search results. The data layer accesses its lowest level data via the database wrapper class 210.

Navigator 212: The aim of the navigator 212 is to manage lists of data objects (Figs. 4 and 5) that it receives from Data Layer 211, and to permit the GUI/navigator interface layer 213 to access this data as required via simple list type calls such as GetNextObject and GetPreviousObject.

The navigator 212 mainly deals with lists of information. These lists can potentially be very large (e.g.. The results of a query.) It is the navigators' 212 task to make sure that the data is accessed and supplied efficiently to the end user, as described in detail below. Decisions pertaining to caching of results, and 'when to access' the data are preferably made by the navigator 212.

The navigator 212 also merges data from different books in the user's library. For example, a search may be performed on each of 3 different books, yielding three separate alphabetical lists. These lists are typically merged to obtain a query result including a single alphabetical list.

GUI/navigator interface 213: The aim of the GUI/navigator interface 213 is to supply a set of objects for a User interface 214. The aim is to package the contents of layers 210, 211 and 212 into a set of API's such that any User Interface 214 can ask for information and present the information to the end user. The GUI/navigator interface 213 works together with navigators 212. As described in detail below, Navigator 212 supplies lists of a very basic type of class called a Data Object (Figs. 4 and 5). There are many different types of data objects (HTML data objects, video data objects, etc.) each of which may be viewed differently by the system. Each type of data object may have different properties that the GUI/navigator interface 213 recognizes for handing over to the GUI.

Preferred data object types are described herein with reference to Figs. 4 and 5 and may include any element of data used by GUI/navigator interface 213 such as an article, a complete book, a bookshelf, or a multimedia item. Data objects are typically created in the Data layer 211 responsive to a request, from GUI 214, for a data objector a set of data objects such as a

query. The data layer 211 receives the request, prepares a data object or list of data objects accordingly, and supplies this through an object termed herein Data Supplier 704 (Figs. 7 and 9).

The Navigator 212 manages the resulting lists, including, for example, merging of several lists pertaining respectively to several books associated with a single query. The Navigator 212 sometimes requests more Data Objects from the data suppliers 704 when required. The Navigator feeds information to the GUI/Navigator Interface 213 responsive to GetNext and GetPrevious requests, i.e. GUI/Navigator Interface 213 can get data objects by requesting them from navigator 212.

Graphical User Interface 214: The GUI is shown in Figs. 10 - 60.

The research center, as shown e.g. in Fig. 20, preferably includes the following components:

a. Browser list -- list of information items currently available to user as shown on left half of screen in Fig. 20,

b. Display area -- displays an information item accessed by the user by selection from the browser list or by hyperlinking or by manipulating the article navigation bar in top right hand side of Fig. 20

c. Status and system navigation bars -- as shown on bottom and left, respectively, of screen display of Fig. 20, the status and navigation bars allow user to view and change his or her status within his or her library and to move easily to different locations in the system.

The User interface layer 214 is the presentation layer of the system. It presents information from the interface 213 as well as accepts User request from the user to get or alter data from the GUI/Navigator interface 213.

Reference is now made to Fig. 3 which is a

simplified functional block diagram of the Data Layer 211 of Fig. 2. The system of the present invention includes one or more digital books 100. The list of books is stored in the Library 160. Books can be added from a Internet Bookstore 175 or CDs. Updates can also be received from an Internet Bookstore 175. The user is able to organize his books in a Bookcase 602. Each book supports a set of queries 604 as defined by the template 608 and a hierarchical view of articles 606. The user may bookmark particular articles and place them in a binder in his Briefcase 603. Articles 606 may also be linked to media from the Media Database 170. Each book has a set of attributes 612, including attributes data and procedures for manipulating this data. The attributes data are typically stored in Attributes table 427 of Fig. 6.

Bookcase 602 typically stores a bookcase table 473 (Fig. 6) and also knowledge of how to access and use the data in table 473.

A "binder" is a collection of articles which the user has chosen to group together.

The user's "briefcase" is the collection of all the binders that the user has defined. A briefcase 603 typically stores a briefcase table 449 (Fig. 6) and also knowledge of how to access and use the data in table 449.

The library 160 is used to keep information in the system of the present invention about all the books that a user owns. The database tables 401, 423, 427, 430, 440, 485 and 490 (Fig. 6) for each of the books may reside on the user hard disk or CD-ROM/DVD. The library 160 then points to the location of each book.

The Library 160 is the gateway to the Data layer 211. It is the first object created and the last to be deleted. When the Library is created it creates objects for the Bookcase 602, Briefcase 603 and each of the books 100 in the system. The Library 160 maintains

a complete list of books 100 in the Library Table 493. Adding and deleting books is done by updating the Library Table 493.

The Library Table 493 is also used to maintain an active set of books. The active set is the set currently being queried. All other books are stagnant.

The library is the gateway for accessing files and getting information from specific books. All requests for data are channeled through the Library to the appropriate book.

A preferred embodiment of BookCase 602 is now described.

The user can organize the books in her library into bookshelves which need not be mutually exclusive as to the books placed on them. For example, there may be a shelf for encyclopedias, a shelf for old books and a shelf for Judaica and an old edition of the Judaica encyclopedia may be positioned on all of these shelves. The Bookcase manages the set of bookshelves. Each Bookshelf comprises one or more books. A book may appear on multiple bookshelves and may be freely moved between bookshelves. A Bookshelf has a name, an optional user defined description, a list of books that are on that bookshelf.

There is one special purpose bookshelf that cannot be deleted. It is the librarian bookshelf. The librarian is used to hold new books that have never been assigned to a bookshelf. Every book typically appears on at least one bookshelf. If the user deletes a book from all the bookshelves then it appears on the librarian shelf.

The Briefcase 603 stores a series of binders. Binders allow the user to organize articles into projects or topics of interest. Each binder can have articles, media or Internet sites inside.

The Media Database 170 is the central storage

site for media shared across books. This enables multiple books to share one physical piece of media and saves on disk space. The Media Database 170, or parts of it, may reside on the CD/DVD, Hard Disk or Internet. Media is first looked for on the hard disk, then on the CD/DVD and finally on the Internet.

This allows overloading of media. If it is desired to update a particular piece of media on the CD/DVD then a record can be added to the media database table 460 of Fig. 6 on the hard disk with the ID for the media and the updated media. Then the program finds the updated media first.

The media database 170 stores a media database table 460 (Fig. 6) and also knowledge of how to access and use the data in table 460. Bookcase 602 typically stores a bookcase table 473 (Fig. 6) and also knowledge of how to access and use the data in table 473. A briefcase 603 typically stores a briefcase table 449 (Fig. 6) and also knowledge of how to access and use the data in table 449.

Templates 608 are preferably provided which define certain characteristics that are common to a set of books. Common characteristics include the media formats and how to display them, the defined query types and the global set of valid values for searches on a predefined set of items such as media types or subjects.

A "template" is defined for each type of book accommodated by the system. For example, the system may have a separate template for each of the following: cookbooks, children's picture books, atlases, reference books, novels, catalogs, art books. The template for an individual book type defines the types of query that can be performed for a book of that type and the types of media that can be associated with a book of that type.

The digital library database 160 of Fig. 1 typically stores the following three "template tables"

for each template defined:

a. Query types table 445

b. Query ID table 420

c. Query hierarchical ID table 467

The above three template tables are now described in detail:

a. The query types table 445 defines the types of query available in a particular template. For each query type, a language-specific name is provided, an internal system name is provided and the implementation method for the query type. For example, the system may support four possible implementation methods such as ID, hierarchical ID, string and section.

The above four query type implementation methods are now described in detail.

ID -- There is a predetermined set of valid responses. For example, a media query may have only the following as valid responses: photo, animation, video, speech, sound, music, map, flag.

Hierarchical ID -- Like ID, except that the valid responses are organized into a hierarchical tree for the purposes of display to a user. For example, a subject search query may have a very large predetermined set of valid responses which are displayed to the user in hierarchical groups such that the user would encounter a "history" entry which, if selected, would cause the following entries to be displayed: French history, American history, British history, etc. Similarly, the user would encounter an "animals" entry which, if selected, would cause the following entries to be displayed: mammals, reptiles etc. and if "reptiles" is selected then the following entries would be displayed: snake, lizard, etc.

String -- A valid response is any of a plurality of strings of characters corresponding to the user's current set of active books. The plurality of strings are

typically predefined by defining one or more strings for each article in each book, resulting in predefinition of the valid responses once the user has selected a given set of active books. The string or strings defined for each article typically comprise keywords in that article or other strings of characters in that article which are considered crucial by a producer. Typically, the input to the book compiler 120 (also termed herein the "book creation tool") includes the string or strings defined for each article in the book is to be compiled.

Section -- A full text search of a user-selected section of an article. Typically, the input to the book compiler 120 includes markings for certain sections within a book, typically within each article of the book. For example, the input for a cookbook typically includes a marking of the ingredient section of each recipe (article) in the cookbook such that the Section query type implementation method can be used to perform an ingredient search. Another example is that the input for substantially any book typically includes a marking of titles such that the Section query type implementation method can be used to perform a title search.

b. The Query ID table 420 stores information pertaining to the predetermined set of valid responses for an ID implementation method. For each valid response, the table 420 stores an ID and an associated name. For example, a media query may have 8 valid responses having the following names: photo, animation, video, speech, sound, music, map, flag. Each valid response also has an ID such as the numbers from 1 to 8 respectively.

c. Query hierarchical ID table 467: Stores information pertaining to the predetermined set of valid responses for a hierarchical ID implementation method. The table is similar to table 420 except that it also includes hierarchical information for each valid response such as the following: the ID of the valid response's

parent, the number of sons which the valid response has and the position of the valid response in the list of valid responses which are the sons of the valid response's parent.

A preferred embodiment of the Templates 608 in Fig. 3 are now described. Provision of templates allows a variety of types of books to be displayed differently and have some different functionality, all within the same digital book viewer. This allows for a large selection of different types of books to exist in the system of the present invention. Each type of book preferably has a template. Initially only a general reference template, appropriate for encyclopedias, dictionaries and the like and an atlas template may be provided. Optionally, other templates may be provided, such as one for cookbooks. Every book is preferably defined to use one template. Some specialized templates may require an update to the program.

The template typically comprise the following:

a. The subject list table (the set of topics and sub-topics that can be assigned to a Media object)

b. The fields for a search

Items like the GUI layout, active set of books, current Media Element 202 and Associated Media Item 205 are preferably stored when the user exits the program and reloaded when the program is restarted.

Each Digital Book 100 preferably comprises:

a. a plurality of articles 606 arranged in a hierarchy;

b. a query system 604 defining the types of query which can be performed on the articles, where "article" is a general term referring to a meaningful portion of a book existing within a breakdown of a book into a hierarchy of meaningful portions; and

c. attributes 612, typically stored in Attributes table 427 of Fig. 6, which include information relating

to the book as a whole which are not defined as articles. Attribute information includes, for example, publishing information, author and title, book classification information such as ISDN, Dewey Decimal class and Library of Congress number, information regarding the book's appearance such as font, etc.

Each book 100 preferably comprises all information required for browsing, searching and displaying the book. This information, for each individual book, is stored in some or all of the following tables, also termed herein the "book tables" (Fig. 6): tree table 401, viewdata table 430, attributes table 427, query ID results table 440, query string results table 423, libentry table 485, query hierarchical ID results table 490 and library table 493. The choice of tables selected to store information for a particular book depend on the types of query which is it desired to provide for that book, as described herein with reference to the book creation tool of Fig. 1.

EXAMPLE: In a book about a medical disorder, two types of query were provided: media query and keyword query. The query information was stored in the following tables: query ID results 440, query string results 423.

In an encyclopedia, the following types of query were provided: media query, keyword query and subject query. The query information was stored in the following tables: query ID results 440, query string results 423, query hierarchical ID results 490.

No combining of "book tables" is done between books. Each book is totally independent of any other book in the system because all information regarding the book is stored in tables which contain no information about any other book.

A preferrer embodiment of Query System 604 is now described. Each book stores its query data separately. In addition to actually performing queries, the Query

System can also provide a list of which items are present in a book for a particular type of query. For example if there is a query that displays media items according to their type, the query system knows in advance which media types are present in the book. The results of any query typically comprise a list of articles that satisfy the query.

The library research engine 150 presents to the user the available queries according to his current active set of books. There are typically five different types of queries: Full text, section, string, ID AND hierarchical ID. "Full text" is a standard full text search. "Section search" does a full text type search on only a section of each article e.g. the title or an ingredient). "String search" works on an unlimited set of strings that are assigned to an article, such as a key-word). "ID search" works on an unlimited set of IDs that are assigned to an article (e.g. media type). "Hierarchi-cal ID search" works on an unlimited set of IDs that are assigned to an article where the IDs are organized in a hierarchical manner, e.g. a hierarchy of subjects.

Each book also has a set of attributes 612 such as author, publisher, page formatting and so on that is stored for the overall book as attributes, typically in Attributes table 427 of Fig. 6.

Adding Books to the Virtual library 160: The system preferably supports many books in a virtual li-brary that are only related to each other in that they are in the digital object-oriented format of the present invention. Users may build a virtual library of books and choose any number of books from that library to research at any given time. Therefore the system preferably sup-ports the ability to add and delete books from this library.

In order to facilitate easy download of books from the Internet, a book table compressing format (also

termed herein the VEB format) is used to compress the components of the book (typically comprising the "book tables" of Fig. 6 and the book's template and any fonts used by the book) into a single file. Since the components of the book are compressed, the size of the books is considerably smaller, thereby facilitating the downloading process over the Internet. The compression procedure may, for example, be implemented using a Crusher!, Version 3.2 compression package, marketed by DC Micro Development, POB 54588, Lexington, KY, USA.

Internet Bookstore 175: The engine 150 has the ability to link to any number of virtual bookstores over the Internet. These bookstores contain libraries of digital books in VEB format that are available for downloading and purchasing. Each electronic bookstore 175 includes a database of books which contains pricing and updating information as well as a query database that allows for searching for books. The Internet bookstore is accessed from an embedded WEB browser from within the library research engine 150.

Download and Add process: After a user has chosen a book from the bookstore the WEB site points the user to a URL (universal resource location) at which the selected book is located. This is typically a file in the VEB format. E.g.www.bookstore.acmebooks\books\b12345.veb. The embedded WEB browser checks each hyperlink for a link that has a suffix containing the letters 'VEB'. When found the browser does not navigate to the link but takes control away to perform the following tasks.

1. Using the HTTP protocol create a connection to the server through the URL.
2. Start downloading the VEB file pointed to by that URL using HTTP.
3. Once on the user's system decompress the book and store to disk.
4. Add an entry to the user library pointing to

the new book.

At this point the book is a full member of the user's library and can be researched together with all other books.

Book Update engine 611: The library research engine 150 has the ability to update digital books. New articles and media may be added, modified and deleted. Updates come in the form of packets. Each packet contains a list of tables containing the content and instructions for that update. An update packet is typically downloaded from the Internet although it is possible to receive a packet file (with extension VEU) from a floppy disk or CD which can then be installed with a double-click or when passed as a parameter to the library research engine 150.

Updates can be initiated from a number of points in the library research engine 150.

(A) Update Now: The user can choose to check for, download and install an update for a single book immediately.

(B) Scheduled Updates: Each book has its own schedule of when or how often to be updated. The GUI/navigator interface 213 includes an update scheduler (not shown) which checks, for each book, to see if it is time for a new update packet to be available. If so, it tries to find, download and install the packet. The update scheduler can be called automatically or manually. If it is set to run automatically, the update scheduler is run every time the library research engine 150 is started.

Book update attributes: Typically, there are a number of attributes, i.e. options, which control the book update process and are typically stored in Attributes Table 427 of Fig. 6. Some of the attributes are specific to each book and some relate to all books.

The book specific attributes preferably include one, some or all of the following:

1) Last update: The creation date of the most recent update packet for this book that the user has installed.

2) Check every: How often to check the Internet based on the expected schedule for this book. Are updates for this book expected quarterly, every six months, or according to some other schedule as defined for the book?

3) Last check: The last date on which the Internet was checked for the next update packet.

4) Next scheduled: The date of the next expected update. There are typically two items referred to as the Next scheduled data. One is a field that is stored in the book's attributes table 427. This date either comes with a new book or was downloaded when checking the Internet for updates, or possibly comes inside an update packet. The other "Next scheduled" is the one that is displayed. This date comes from one of several date fields.

5) After due date, recheck for updates every <number> days: Once the "Check every" period had passed since the last update and the Internet was checked and no new update was found, this attribute defines how often should the system recheck the Internet.

6) Status: The stage in the update process for this book. Preferably, there are 4 stages I - IV:

(I) Not yet time for an update: Have not yet reached time to check the Internet to see whether an update has been posted.

(II) Need to check Internet: Ask Internet site whether or not there is a packet available.

(III) Packet exists on Internet: A new update packet has been found but was not downloaded.

(IV) Packet downloaded: The packet was downloaded but was not installed.

7) Updates Server: The site from which to download the update packet.

8) Version #: The update version number. (Updated by packet.)

9) Automatic update: Turn the whole updating process of the on or off.

The attributes related to all books typically include the following:

1) Enable automatic book update: Turn on or off automatic (scheduled) updating for all books. (Those books whose updating is individually turned off remains off even if this attribute is turned on.)

and/or

2) If Internet line is down when automatically updating: (a) Alert user every time (b) Alert user every <number> days. (c) Never alert user.

The first time, in each session, that the scheduler in the GUI/navigator interface 213 (not shown) needs to access the Internet it attempts to make the connection. If a connection is available, it continues with the updates. Otherwise, depending on the above attribute, the updates either is not continued or the user is prompted that there is no active Internet connection and he/she is given the opportunity to establish the connection and continue with the updates.

Scheduling Updates: Updates scheduling can be set to run automatically every time the library research engine 150 is run. Alternatively, the user can choose to start the update scheduling process.

The scheduler in the GUI/navigator interface 213 of Fig. 2 has the following tasks:

1) Loop through attributes of all books and for those books with update status of "Not yet time for an update", check if it is time to try to download the next update. A preferred method for performing this check as follows:

If update exists

Change the status to "Packet exists on Inter-

net".

Else

Change the status to "Not yet time to check for an update" and set "Last check" to today's date.

If a new "Next expected date" is received from the Internet update site

The "Next scheduled" is updated.

"Last check" is set to <blank> after the update packet is installed.

If it is time to download, change the status to "Need to check Internet".

2) From the list of books whose update status is not "Not yet time to check for an update", the user can choose which books to update.

3) Look for all books with update status "Packet downloaded". Change the status to "Not yet time for an update", and clear out the "Last check" date for each book whose update is installed.

4) Loop through attributes of all books and for those books with update status "Need to check Internet" check for an available update. If the update exists, change the status to "Packet exists on Internet". If the update does not exist, change the status to "Not yet time for an update" and set "Last check" to today's date. If the update Internet site sends back a date on which they expect the next update to be ready then the date is saved.

5) Loop through attributes of all books and for those books with update status "Packet exists on Internet", log onto Internet site, download an appropriate packet, and change status to "Packet downloaded.

6) Stage (3) is preferably repeated, to provide the possibility of installing the update that already exists on the user's disk and then downloading and installing an even newer update, if one exists. In addition, the user enjoys the benefit of updating books, with

packets already sitting on his disk, as soon as possible.

A new report is created every time the scheduled process is run. If any new update packets were found or any packet downloads or installs were attempted during the scheduled updating then at the end of the update process a summary of all modifications to the book is displayed to the user.

A preferred embodiment of book update unit 611 of Fig. 3 is now described.

A tab is added to the book attributes dialog for book updates. It typically comprises the following:

1) Last update: The date that the most recent update packet, for the given book, on the user's machine was created. (Updated by packet.)

2) Next scheduled: The date of the next expected update. There are actually two items referred to as the Next scheduled data. One is a field that is stored in the book's attributes table. This date either comes with a new book or was downloaded when checking the Internet for updates, or possibly comes inside an update packet. The other Next scheduled is the one that is displayed. This date comes from one of several date fields:

```
If (Next Expected field is NOT blank)
Use Next Expected field
      Else
      {
       If (Last Update is NOT blank)
              Use Last Update + Check every...
       Else
              Use Book text compilation date + Check
every...
      }
```

3) Last check: The last date on which the Internet was checked for the next update packet.

4) Check every: How often to check the Internet based on the expected schedule for this book. Are updates

for this book expected quarterly, every four months, or according to some other schedule defined for the book.

5) After due date, recheck for updates every X days: Once the #4 "Check every" period had passed since the last update and the Internet was checked and no new update was found, this attribute defines how often the system should recheck the Internet.

6) Status

* Not yet time to check for an update: Have not yet reached time to check the Internet.
* Need to check Internet: Status is set to "Need to check Internet" based on the following:

```
If ( Update Status == "Not yet time to check for an update" )
{
If ( "Last check" > Today )
                "Last check" = <blank>
If ( "Last check" != <blank> && "Last check" >= "Next scheduled" )
{
If ( Today >= "Last check" + "Recheck for updates every...)" )
                Set status to "Need to check Internet".
        }
Else
{
If ( "Next scheduled" != <blank> )
{
                If ( Today >= "Next scheduled" )
                                Set status to "Need to check Internet".
                }
                Else
                {
If ( "Last update" != <blank> )
{
```

```
If ( Today >= " Last update " + "Check every" )
                                        Set status to
"Need to check Internet".                    }
                        Else
                        {
If ( Today >= "Creation date of Book Text" + "Check
every" )
                                        Set status to
"Need to check Internet".
                        }
                        }
}
}
```

Once we do actually check for an update:
If (update exists)
Change the status to "Packet exists on Internet".
Else
{
Change the status to "Not yet time to check for an update" and set "Last check" to today's date.
}
If (we receive a new next-update-date through the CGI)
The "Next scheduled" is updated.
("Last check" is set to <blank> after the update packet is installed.)

* Packet exists on Internet: A new update packet had already been found but, at the time, the user did not want to download the packet.

* Packet downloaded: The packet was downloaded but the user did not want to install the packet at that time.

7) Updates Server: The site from which to download the update packet.

8) Version #: The update version number. (Updated by packet.)

9) Automatic update: Turn the whole updating process of the on or off.

10) Most of the above fields are read-only. The user is typically only able to change (5) "After due date, recheck for updates every X days " and (9) "Automatic update".

When the "Update book now" button is pressed the program first checks if there is already an update for this book on the users disk to install. Then it looks for a new update packet for the book to download and install disregarding the update dates (Last check, etc.) At the end of the process, if a packet has been installed, a publisher's report of all update changes made to this book is displayed in a web browser window with the most recent changes appearing first. The "Update book now" process currently takes place completely in the foreground.

When the "Report" button is pressed the publisher's report is also displayed.

Global Scheduling Options typically include the following:

1) Enable automatic book update: Turn on or off updating for all books (except that books whose updating is individually turned off remain off even if global updating is turned on.)

2) [Last time the user was informed that the Internet line was down:]

3) How often to bother the user if the Internet line that is down: This is an offset from (2) "Last time the Internet line was down."

4) Book List: List of all books. When a book name is selected the book attributes dialog box for that book appears with the book update tab on top.

5) Full library update: Runs the scheduling process as described below as when the user runs the exe except that:

(a) If the user is not registered for updates they are given the opportunity to register at this point.

(b) The "Enable automatic book update" flag is ignored in this case. It is considered to be checked.

(c) The user is always "bothered" if the Internet connection is necessary and appears to be down, regardless of the settings in the options dialog box.

(d) A report is always displayed even if nothing significant took place during the update process.

6) View Report: A report of the last scheduled update is displayed.

Scheduling: The updating process begins each time the user runs Versabook.exe (Appendix A) provided that (a) the user has checked off the "Enable automatic book update" checkbox (b) updates have not been turned off by way of the Product.ini file and (c) the user is registered for updates. A low priority background thread (scheduler) controls the initial stages of updating. These stages include checking the book update status', checking for updates on the Internet, downloading, and decompressing packets. The stage that would most likely be done in the foreground would be the actual installing of the packets. For the installation phase to take place in the background, the user might not be allowed to activate the book in the "List of books" dialog box, or to access items in a binder from that book, etc.

The tasks of the scheduler are the following:

1) Loop through attributes of all books and for those books with update status of "Not yet time for an update" check if it is time to try to download the next update using the rules described above under Book Attributes/Status/Need to check Internet. If so change the status to "Need to check Internet".

2) Display a dialog box with the names of all books with update statuses other than "Not yet time for an update" - all books for which some significant action

may take place. Next to each book is a check box. The user can uncheck any book updates that he chooses and then choose OK to continue or CANCEL to skip all subsequent stages of the update process.

3) Look for all books with update status "Packet downloaded". Before a book is updated it is "turned off". It is taken out of the list of books. After the update, the book is turned back on. Change the status to "Not yet time for an update", and clear out the "Last check" date for each book whose update is installed. This stage is performed at the beginning and then again at the end of the update process. In this way there exists the possibility of installing the update that already exists on the user's disk and then downloading and installing an even newer update, if one exists. In addition, the user enjoys the benefit of updating books, with packets already sitting on his disk, as soon as possible.

4) Loop through attributes of all books and for those books with update status "Need to check Internet" check for an available update. If the CGI says that the update's subscription has expired then the update process does not continue for this book and the user is notified of the subscription's expiration in the update report. Otherwise, if the update exists, change the status to "Packet exists on Internet". If the update does not exist, change the status to "Not yet time for an update" and set "Last check" to today's date. If the CGI sends back a date on which they expect the next update to be ready then we save this date.

5) Loop through attributes of all books and for those books with update status "Packet exists on Internet", log onto Internet site, download an appropriate packet, and change status to "Packet downloaded. Also, save the name of the packet.

The update packet that should be downloaded for the book is the one that matches the "Version #" (the

update version number) of the book; for example, a person who had already installed update #2 wants to download 2.veu (update file.) This file may include updates #3, or #3 and #4, or #3 and #4 and #5, etc.

Accessing the file to download is done through a CGI (for example, \www.versabook.com\<update cgi>:%ISBN %update packet.

6) Look for all books with update status "Packet downloaded". Before a book is updated it is "turned off". It is taken out of the list of books. After the update, the book is turned back on. Change the status to "Not yet time for an update", and clear out the "Last check" date for each book whose update is installed.

A new report is created every time the scheduled process is run. If any new update packets were found or any packet downloads or installs were attempted during the scheduled updating then at the end of the update process a summary of what took place is displayed to the user. This report can also be viewed by clicking on the "View Report" button of the user options updates tab.

The first time, in each session, that the scheduler needs to access the Internet it attempts to make the connection.

If a connection is available:

{

Continue with updates.

}

Else

{

If the user said to never bother him/her - Skip the update process.

If the user said to always bother him/her - go to ASK USER.

If the user said to bother him/her after X period...

{

If (2) " Last time the user was informed that the Inter-

net line was down " is blank (This should only happen the very first time that the connection is down.))
{
Go to ASK USER.
}
Else
{
If it is time to prompt the user to connect to the Internet in order to check for an update (If the global scheduling option (3) "How often to bother the user if the Internet line that is down" + (2) is greater than or equal to today's date.)
{
Go to ASK USER.
}
Else
Skip the update process.
}
}
}

ASK USER

Set (2) to today's date.

Display a dialog box that prompts the user to hit the Continue button if he/she has succeeded in setting up the Internet connection or the Cancel button to skip the update process.
If there is an Internet connection now:
Continue the update process.
Else
Skip the rest of the Internet related functions of the update process.

Data Objects useful in the system of the

present invention are now described. A Data Object is a generalized base object for representing one logical piece of data, for example an article, a media item, a book, a keyword etc. Each data object has a name, which may be a title, as in the case of a Book Data Object 512 or Media Data Object, or just a string as in a Query String Data Object 542. Every Data Object has at least two functions, Loaddata and Savedata. Loaddata is the function that tells a Data Object to read its data from a record in any of the tables of Fig. 6. Savedata tells the Data Object to write its data to a record in an individual one of the tables of Fig. 6. Data Objects get a pointer to that table after the current record in the table is positioned correctly.

A digital book is viewed as a hierarchical set of objects or articles. Each object in a book is referred to as a Media Object, also termed herein a "Media Data Object". A media data object typically stores the title for an article in a book, the content of the article, a user defined note and other information for managing and defining the book. In the illustrated embodiment, each media data object is represented by a record in each of two tables: Tree table 401 and Viewdata table 430 (Fig. 6). In other words, each of the tables 401 and 430 includes data regarding a multiplicity of objects or articles. The records in the two tables which correspond to the same object are identified by their common ID (fields 402 and 431 in tables 401 and 430 respectively).

Fig. 4 is a representation of a typical book as a hierarchy of objects, also termed herein "media data objects" or "media objects". As shown, there are five different types of Media Objects: Media Containers 201, Media Elements 202, Media Element BackMatter 203, Media Element Groups 204 and Associated Media Items 205.

There is always one and only one Media Container 201 per book which is at the root of the book

hierarchy.

Media Elements 202 form the core of the book. They may represent any meaningful portion of the book (also termed herein "article"). Depending on the book type, each article may comprise a volume, part, section, chapter, picture or encyclopedia article.

For example, in a cookbook, each article may comprise a single recipe. Sections of the cookbook may also be considered "articles", each of which comprises a plurality of recipe-articles.

In road atlases, each article may comprise a single map.

In instruction manuals, each article may comprise a chapter or a step in an instruction sequence.

In a dictionary, each word entry may comprise an article.

In encyclopedias, each encyclopedia article may comprise an "article", and each subsection in each article may also comprise an article.

In telephone books, each subscriber record may comprise an article.

In picture books, each page may comprise an article.

In novels, each chapter may comprise an article.

In newspapers and newsmagazines, each article may comprise an "article" and subsections within an article may also comprise "articles".

Media Elements 202 may or may not have viewable data attached to them. The sons of a Media Element 202 may be other Media Elements 202 or they may be Associated Media Items 205.

In the illustrated embodiment there are various types of data objects which are differently experienced by the user.

An Media Element Back Matter 203 is similar to

a Media Element 202 except that it is disregarded by a query.

A Media Element Group (MG) 204 is similar to a Media Element 202 in that it is not disregarded for the query. However, the article represented by the media element group is not merged with its sons when it is displayed.

Associated Media Elements 205 are typically in a different medium than are the majority of media elements. Typically, for conventional books, all of the media elements are text and the associated media elements are non-text elements which may, for example, be imported from the media database 170 of Fig. 1. However, if the "book" is an atlas, each map might be defined as a media element whereas country facts or other non-map, minority elements in the atlas might be defined as associated media elements. Associated Media Items 205 are always the sons of Media Elements 202 and, unlike ordinary media elements, never have any sons of their own.

Fig. 5A is a diagram of a representation of a typical user's briefcase 603 (Fig. 3) as a hierarchical tree of digital data objects.

The root of the tree is a Root Data Object 502. Each binder is represented by a Binder Data Object 503. The Binder Data Object 503 holds a name to identify each binder and an optional user attached note. The items in a Binder are either articles or Web Pages. Articles are represented by Media Data Objects 504 and Web Pages by URL Data Objects 505.

Fig. 5B is a diagram of a representation of a typical user's bookcase 602 (Fig. 3) as a hierarchical tree of digital data objects. The root of the tree is a Root Data Object 502. Each bookshelf is represented by a Bookshelf Data Object 511. Bookshelf Data Objects hold the name of the bookshelf, an optional user defined note and an optional bitmap, bookshelf type (librarian, recy-

cle bin or normal) and an internal name. The items on a BookShelf are Books and are represented by Book Data Objects 512. Book Data Objects hold their name, the status of the book (active, inactive) ISBN, information for accessing the book and the book attributes 612.

A book is "active" if it has been selected by the user from the shelves and placed on the Research Desk. All books designated as active are searched for each query, unless a subset of active books is indicated in the definition of the query, whereas inactive books are not searched.

The Media Database 170 typically comprises a list of Media Database Data Objects which store Items Format information, as defined below and also information describing how to locate the actual media. Items Format describes the encoding method or media format of a particular item of media, such as JPEG, MPEG1, MPEG2, GIF, shockwave flash, quicktime, flashpix, and son.

The queries 604 supported by a book are represented by a list of Query Type Data Objects 531. Each Query Type Data Object holds an Internal name, external name and an implementation type. The external name is for display and the internal name is for implementing the query. The implementation type defines the method used for implementing the search, e.g. "string", "section", "query hierarchical ID", "query ID", etc.

In the illustrated embodiment, there are three different Query Results Data Objects 541, 542 and 543, one for each of the query types that have a predefined set of valid query items, i.e. Query String, Query Hierarchical ID and Query ID.

Query Hierarchical ID Data Objects 541 are used to define the complete hierarchical tree for the query and the items that are attached to articles in the book.

Query String Data Objects 542 are used to

define the items that are attached to articles in the book.

Query ID Data Objects 543 are used to define the complete set of valid response for the query and the items that are attached to articles in the book.

All the Query Results Data Objects hold a count as described in detail herein. Query Hierarchical ID Data Objects and Query ID Data Objects hold IDs, Query String Data Objects holds a name.

Fig. 6 illustrates data tables provided in accordance with a preferred embodiment of the present invention. The data tables include "book tables" 401, 423, 427, 430, 440, 485 and 490 for each book in the user's library, "general tables" 449, 473, 493 and 804 which store general information used by the user's system 135, "template tables" 420, 445 and 467 which store information pertaining to templates 608 and a "media database" table 460 storing information pertaining to the user's media database 170. Typically, the template and book tables are stored in digital book library database 160 of Fig. 1, the general tables are stored in library research engine 150 of Fig. 1 and the media database table is stored in media database 170 of Fig. 1.

Library Table 493 stores all the data relevant to the library 160 (Fig. 3). It contains the data for various manipulations of books 100 in the library and in the current active set of books in the library, such as data for the following manipulations: deleting books, adding books, getting book names. The data in the Library table 493 is read by a Book Data Object 512.

Library table 493 preferably includes the following fields:

a. Book ID 494: unique ID for each book assigned when the book is installed. Book IDs are assigned sequentially starting with 1.

b. Title 495: String containing the title of

the book.

c. Book Status 496: On/Off/Unreachable/Purged, etc. "On" means that the book is part of an active set, "off" means that the book is not part of an active set, "unreachable" means that the book is on an Internet site that cannot be reached and "purged" means that the book has been deleted from the system. These values are updated and maintained by the library research engine 150. Typically, books are "placed" on a recycle shelf after they have been deleted and until they are actually purged from the system.

d. New Status 497: Flag indicating if this book is a newly bought book. Typically, this flag is permanently changed to OFF as soon as a new book has been first placed on a bookshelf.

e. Book Path 498: The book path indicates where the data files for the book are stored. All the book tables (Fig. 6) for a book typically have standard names and are stored such that there is a different base directory for each book.

The present invention preferably provides two base directories for storing the tables of Fig. 6. One base directory points to a location on the user's hard disk. The other base directory points to a location on the DVD or CD.

All books added by the user is stored under the base directory on the hard disk. Books on the DVD or CD are stored under the base directory on the DVD or CD.

When installing the program of the present invention the user preferably transfer all non-viewable data for DVD or CD books to his hard disk for speed purposes. This results in part of a book being on the local disk and part on the DVD or CD. When a data file is to be opened the system looks on the hard disk first and then on the DVD or CD.

In the future this book path could point to a

URL for remote books that are accessed over the Internet.

f. Book Type 499: Value indicating which type of book object is to be created for this book.

g. Data Object Type 550: Field indicating the type of data object to be created to hold the information in this row of the Library table 493.

h. Template Name 551: The name of the template to be used for the book. Template tables are located by appending this name to "<DataPath>/Templates/" where <DataPath> is the overall path for the tables of Fig. 6.

i. Tree Table Type 802: Value indicating the type of book table to create for the individual book, i.e. the conventional database technology which is to be used to implement the book tables for the individual book.

j. ISBN 553: International Standard Book Number. Used to uniquely identify any book.

The BookCase Table 473 holds all information for bookcase 602 and the list of books on a bookshelf. The data in the Bookcase table 473 is read by Bookshelf Data Objects 511 and Book Data Objects 512. The Bookcase table 473 preferably includes the following fields:

a. Bookshelf ID 474: Unique ID assigned when the bookshelves are created or a book is placed on a bookshelf.

b. Name 475: The displayable name for a bookshelf either assigned by user or standard name for a standard bookshelf. The user may modify the name of this bookshelf at any time.

c. Internal Name 476: Name for bookshelf used to keep track of a bookshelf even if the user has modified the name.

d. Parent ID 477: Pointer to parent BookShelf Object. Needed to move up in the tree.

e. Number of Sons 478: Integer indicating the total number of direct sons the BookShelf Object has.

This is useful in allowing the title browser to determine the weight of a BookShelf Object and to determine what to display without actually traversing the tree. It is also used in the traversal of the tree to determine the last son.

f. Son Number 479: Integer indicating the position of the BookShelf Object in the list of sons for the parent. There is an index on this field combined with the Parent ID field. This allows random access to a specific son of a bookshelf object.

g. Data Object Type 480: Field indicating the type of data object to be created to hold the information in this row of the Bookcase table 473 (e.g. BookshelfDO or BookDO).

h. Book ID 481: Reference to a book from the Library Table 493.

i. Deletable 482: This flag indicates whether the user can delete the bookshelf. Standard bookshelves are not deletable as that is the location that new books are placed when first being installed.

j. Shelf Type 483: Is used to define special types of bookshelves. Currently there are two special bookshelves - librarian & recycle. The librarian is used to hold new books that have never been assigned to a bookshelf. The recycle shelf is used to hold books after they have been deleted before they are purged from the system.

k. Description 484: User defined textual description of a bookshelf.

The Briefcase Table 449 holds all information for briefcase 603 and the items in a binder. The data in the Briefcase table 449 is read by Binder Data Objects 503, Media Data Objects 504 or URL Data Objects 505. The Briefcase table preferably includes the following fields:

a. ID 450: unique ID for each Binder Item

b. Name 451: Name of the binder if the record represents a binder. If the item is Media Object then this entry could be used to allow the user to customized the name of the Media Object.

c. Parent ID 452: Pointer to parent BookShelf Object. Needed to move up in the tree.

d. Number of Sons 453: Integer indicating the total number of direct sons the BookShelf Object has. This is useful for the title browser in determining the weight of a BookShelf Object and to determine what to display without actually traversing the tree. It is also used in the traversal of the tree to determine the last son.

e. Son Number 454: Integer indicating the position of the BookShelf Object in the list of sons for the parent. There is an index on this field combined with the Parent ID field. This allows random access to a specific son of a bookshelf object.

f. Data Object Type 455: Field indicating the type of data object to be created to hold the information in this row of the Briefcase table 449 e.g.BinderDO, MediaDO or URLMediaDO).

g. Book ID 456: ID to indicate which book the media object comes from. Only used in records that represent entries in a binder.

h. Media Object ID 457: ID to indicate the media object that was placed in the binder. Used in combination with the book ID field to uniquely identify a media object in the library. Only used in records that represent entries in a binder.

i. Description 458: User defined note attached to binder or binder entry.

j. URL 459: The URL address for a Web Page when it is added to the binder.

The Media Database 170 gets the actual media from the Media Database Table 460 using the Media Data-

base ID 461. The data in the Media database table 460 is read by Media Database Data Objects 521 or Media Database Data Objects 504. The Media Database 460 typically includes the following fields:

a. Media Database ID 461: Unique ID for identifying objects in media database 170.

b. Location 462: This field indicates if the actual data is stored in the Viewable Data field of the Media database table 460 or in a file.

c. Format 463: The format of the media (e.g. jpg, gif, flash, mpeg2

d. Viewable Data 464: If the data is stored in the Media database table 460 then this field contains the actual viewable data. If the data is stored in another file then the path to the data, including the filename, is stored in this field. The path is relative to some base directory for all data in the media database 170.

e. Copyright ID 465: Optional index into an optional copyright table (not shown) which indicates particulars of the copyright holder for this media.

f. Photographer ID 466: Optional index into an optional photographer table (not shown) to indicate the photographer/artist who created the media.

The Tree Table 401 provides and stores the information on the hierarchical structure of the book. It preferably provides all information with regard to an item in the book except the actual viewable media, which is stored in the viewdata table 430.

If a Media Object has some sons that are Media Elements 202 and some that are Associated Media Items 205 then the Associated Media Items 205 typically appear together at the beginning of the list of sons for the Media Objects.

Following is a preferred list of data fields for the Tree Table 401:

a. Media Object ID 402: A unique ID assigned to each Media Object.

b. Sort Name 403: Title of Media Objects with all HTML tags and special characters removed. This field allows the indexing facility of any conventional database technology to be used, so as to implement a follow-me on the name of an article.

c. Name 404: Title of Media Object. Will be displayed in title browser and when an article is loaded for display. This title includes all HTML codes and special entities that are useful for displaying the name correctly on an HTML page.

d. Parent ID 405: Pointer to parent Media Object. Needed to move up in the tree.

e. Son Number 406: Integer indicating the position of the Media Object in the list of sons for the parent. There is an index on this field combined with the Parent ID field. This allows random access to a specific son of a media object.

f. Number of Sons 407: Integer indicating the total number of direct sons the Media Object has. This is useful for the title browser, for determining the weight of a Media Object and to determine what to display without actually traversing the tree. It also allows the last son to be determined.

g. Media Object Type 408: Indicates if media object is the root of the book, a media element, an associated media item, or embedded media.

i. Media Type 409: Indicates the type of visual media represented by this media object. Article, Picture, Video

j. Data Object Type 410: Field indicating the type of data object to be created to hold the information in this row of the Tree table 401.

k. User Note 411: User defined note attached to an article.

l. Paragraph Number 412: If the item is an AMI then this field specifies which paragraph of its parent article it should be inserted in. If the paragraph number is zero the media is not embedded in the article.

m. HTML Level 413: The HTML heading tag level to be used to display the title of the article.

n. Language 414: The language of the article.

o. Version 415: Update version of the article. Initially all articles have a version of 0.

p. Embed List 416: A list of Media Objects that have embedded this media object in their articles. This is useful in order to know what other articles are affected if this article is deleted.

q. Reference List 417: A list of Media Objects that have hyperlinks to this media object in their articles. This is useful in order to know what other articles are affected if this article is deleted.

r. MediaDB ID 418: If the media for the media object comes from the Media Database 170 then this field is the ID for locating the media in the media database 170. There is an index on this field that allows all articles linked to a specific piece of media to be located.

s. Duplicate 419: This field indicates that this is the first media object in this book to use a given Media Database ID 461. If the media for the media object is not from the Media Database 170 this field is irrelevant. This allows the first use of a media piece in the book to be marked, and consistently used for naming the media in the media search so the results for the media search are in alphabetical order.

The Viewable Data Table 430 stores the viewable data associated with Media Objects. There may be two instances of the Viewdata (viewable data) table 430 for a book, one on the hard disk and one on read-only media. Specifically, if the book is delivered and used from some

read-only media (i.e. CD-ROM or DVD) then the original Viewdata table 430 is left on the read-only media. Updates are stored in the Viewable Data table 430 on the hard disk. When a Media Object wants to read its viewable data it checks the viewdata table 430 on the hard disk first. If the hard disk version of the viewdata table 430 does not contain a record for the ID then the viewable data is read from the Viewable Data table on the read-only media.

There are two pieces of viewable data. In most cases only the first piece is defined and used. In some cases, such as a sound combined with a picture, both are defined and used.

Following is a preferred list of the data fields included in the viewable data table 430:

a. Media Object ID 431: The unique ID assigned to each Media Object.

b. Viewable Data 432: Memo field that contains the viewable data such as an HTML file, a GIF or a JPEG. If the viewable data is stored in the media database 170 then this field contains the Media Database ID 461. If the data is stored in a standalone file then this field contains the filename of that file. The actual text of each article of a digital book 100 is typically stored in this field.

c. Caption 433: Memo field containing the caption for a picture.

d. Hotspot 434: Memo field containing a hotspot map for the picture. If the hotspot data is stored in the media database 170 then this field contains the Media Database ID 461.

e. Media Format 435: Indicates the format used to store the visual media HTML, GIF, JPG)

f. Location 436: Indicates if the viewable data is stored in the memo field, a separate file, the media database 170 or that there is no viewable data for

the item

g. Viewable Data 2 437: Memo field that contains the viewable data such as an HTML file, a GIF or a JPEG. If the viewable data is stored in the media database 170 then this field contains the Media Database ID 461. If the data is stored in a standalone file then this field contains the filename of that file.

h. Media Format 2 438: Indicates the format used to store the visual media (HTML, GIF, JPG)

i. Location 2 439: Indicates if the viewable data is stored in the memo field, a separate file, the media database 170 or that there is no viewable data for the item

j. Attributes Table 427 stores attributes that are applicable to the entire book rather than to individual articles therein or portions thereof. This table preferably comprises 2 fields: Name field 428 and value field 429.

The types of data preferably comprise the following.

a. Merge Level: A number, greater to or equal to one, which corresponds to level on the "tree" of the article or media. The root node of the book is on level 1, the main articles of the book are on level 2, etc. There exists a user option "View sub articles with main article" where an article is considered to be a main article if its level is the same as the merge level.

b. Copyrights Page #: Each book has an added page that contains the copyright information for all of the articles/media of that book. The "Copyrights Page #" is the ID number 402 of the record in the book's tree table 401 which stores the copyright information for the book. When the user is shown a hierarchical view of a book (Fig. 31), the copyright page is typically displayed at the bottom of the list of articles for the book i.e. at the bottom of the browser list.

c. Copyright: There is copyright information for the book (as opposed to the article) which can be viewed in the general tab of the book properties' dialog box.

d. Copyright hyperlink text: There is a hyperlink at the end of every article which, when pressed, links to the copyright page for all articles/media of the book. The text of this hyperlink is stored as an attribute for the book.

e. Overview Page #: Each digital book generated by the book compiler has an "overview page", which is provided by a user of the book compiler, which contains a short overview for that book such as the promotional material and/or summary that sometimes appears on the back cover of a book. The "Overview Page #" is the ID number 402 of the record in the book's tree table 401 which stores the overview page. The overview can be viewed in the book properties' dialog box overview tab.

f. Author: The author of the book can be viewed in the general tab of the book properties' dialog box.

g. Publisher: The publisher of the book can be viewed in the general tab of the book properties' dialog box.

h. Library of Congress #: The Library of Congress number for the book can be viewed in the general tab of the book properties' dialog box.

i. Dewey Decimal #: The Dewey Decimal number for the book can be viewed in the general tab of the book properties' dialog box.

j. Book Version #: The version number of the book currently on the user's machine can be viewed in the general tab of the book properties' dialog box.

k. Text Date: The date that the processing of the text, for the current book on the user's machine, was completed. This can be viewed in the general tab of the

book properties' dialog box.

l. Compile Date: The date that the compiling of the current book on the user's machine was completed. This can be viewed in the general tab of the book properties' dialog box.

m. Default Internal Bookshelf: The default (internal) bookshelf determines on which shelf an unshelved book is placed when the user chooses, in one of the library views, to have the book automatically shelved.

n. Default Bookshelf: The same as the Internal Bookshelf name accept if modified by the user.

o. URL base: The basis of the URL to be used to locate Internet media. The book's ISBN number and the media item's ID number are among the parameters added to this URL.

p. Full Text Search Database Type: The system of the present invention preferably has the ability to switch between different databases, such as the Verity database, that are used for the various full-text, keyword, and other searches.

q. Media Search Engine: The system of the present invention preferably has the ability to switch between different conventional engines for performing media searches, selecting all media by category - video, picture, sound, etc. for all active books. Alternatively, a customized media search engine may be employed which precomputes results to facilitate rapid media searching.

r. Table Type: The book tables for each book can be implemented using any conventional database technology such as but not limited to Codebase, Foxpro, SQL server and Access. Typically, all tables for a single book are implemented using a single database technology. The database technology used to implement the tables of an individual book is stored in the Table Type attribute.

In other words, if a particular book is implemented in Foxpro, then one of the records of the Attributes Table 427 of that book would include the following information:

"name = TABLE TYPE; value = FOXPRO".

s. Page formatting attributes: There are a number of attributes that are used to enhance the format of an article or piece of media including determining backgrounds for an article and its caption.

t. Update Attributes:

Update creation date (Last update) - See Updates section

Update last checked (Last check) - See Updates section

Updates - How often to check (Check every) - See Updates section

Updates - How often to recheck (After due date, recheck for updates every <number> days) - See Updates section

Update version # - See Updates section

Update status - See Updates section

Update active status (Automatic update) - See Updates section

Updates server name - See Updates section

Updates URL: The URL site where updates for the book can be found.

Updates CGI Path: The path to the program that exists at the URL site. This path includes parameters used by the program to find the appropriate updates.

Updates Site User: Username for URL site.

Updates Site Password: Password for URL site.

Update Filename: The name of the update packet name that has been downloaded. This attribute is stored as an update packet may not be installed immediately after being downloaded.

u. Subscription Site: The site (CGI path) at which the user can subscribe for updates for a given

book. Among the parameters sent to the Subscription Site is the update version number of the book.

v. User turned off update: At the beginning of the scheduled updating procedure, a list all books for which it is time to check for an update or for which an update packet needs to be downloaded or to be installed are displayed to the user. The user is then given the choice to exclude books from the update process, in which case the above attribute are set to true.

For each of the above parameters (a) - (v) i.e. from "merge level" to "user turned off update", a code indicating the data type is stored in the name field 428 whereas the value is stored in value field 429. for example, if the merge level is 2, there is a record in the table for which "name" is the code for "merge level" and "value" is 2.

The book tables of Fig. 6 include 3 query result tables 423, 440 and 490. Each of these tables may be defined once or more for each book, and may not be defined at all for some books, all depending on the types of query defined for each book. For example, a popular medical book may have only two types of query defined for it: Media and keyword. Therefore, the popular medical book would have 2 query result tables, namely a Query string result table 423 for the keyword query and a query ID results table 440 for the media query.

Each query result table is applicable to one or more query implementation methods. A book includes one instance of each of the 3 types of query result table (i.e. one physical table) for each query type defined for the book which uses the implementation method of that type of query result table.

For example, a particular book may have two types of query: country search and keyword search. Both of these queries typically use the same implementation method, i.e. "String". Therefore, the book would have two

query string results tables 423 and no other query result tables.

The Query Result Tables 423, 440 and 490 provide assistance to the user by presenting a list of items that the user can choose from to execute his query. For example if the book supports a keyword query type then the query string results table 423 implementing the keyword query type holds a list of all the keywords for all the articles in the book. In the case of a search for a string, such as a keyword, the table 423 for the keyword type query allows implementation of a "follow me" by way of the NameSort field 425 of table 423.

Each record in a query result table corresponds to a particular query. For example, a query result table may be supplied for all queries whose query type is Country. Each such query, such as Australia, Canada, Denmark etc. is a record in the query result table for the Country query type. A reference count (count field) is maintained for each record in each of the query result tables 423, 440 and 490 (numbered as fields 526, 444 and 492 respectively in Fig. 6). These fields store the number of articles that respond to a particular query. For example, the reference count for the Australia record in the query result table for the Country query type stores the number of articles in the book which relate to Australia. The reference counts are useful because if the reference count of, say, the Australia record reaches zero, due to deletion of all articles related to Australia then the Australia record is removed from the query result table.

The Query Result tables 423, 440 and 490 also are useful for precomputation of the results for a query item in order to present results to the user very quickly. This is typically only used in the case of a Media search.

Preferred data fields for the Query Result

Tables 423, 440 and 490 are now described.

DATA FIELDS FOR QUERY RESULT TABLE 423:

a. Name 424: The valid search strings.

b. Name Sort 425: The Sort Name field is only present where the search is for a string such as in the case of keywords. The name has all HTML tags and special characters removed. It is also normalized in lower case. This field allows the indexing facility of any conventional database technology to be used to implement a follow-me on the name of an article.

c. Count 426: The number of Media Objects that respond to a search for that key. This field must be updated whenever the book is updated. When the number of occurrences reaches zero the record may be deleted from the table 423. This field is useful for determining, after deleting an article, if the query value is still valid.

DATA FIELDS FOR QUERY ID RESULT TABLE 440:

a. ID List 441: This is a field which allows a very fast query to be run. The results for a query can be precomputed and the list of Media Objects that respond to that item can be stored in a list of IDs. This greatly improves the response time but increases the amount of disk space required and increases the compilation time. It is currently only used for media where there are only a few different media types and where speed is very important.

b. Location 442: The location where the ID List is stored. Possible values are "table" or "field". If the value is "field" then the list is stored in the ID List field. If the value is "table" then ID List typically just points to an optional table (not shown) that

holds the ID List, one ID per record. Each very large ID list may be stored in a separate table.

c. ID 443: The valid search strings.

d. Count 444: The number of Media Objects that respond to a search for that key. This field must be updated whenever the book is updated. When the number of occurrences reaches zero the record may be deleted from the table 440. This field is useful for determining, after deleting an article, if the query value is still valid.

DATA FIELDS FOR QUERY RESULT TABLE 490:

a. ID 491: The valid search strings.

b. Count 492: The number of Media Objects that respond to a search for that key. This field must be updated whenever the book is updated. When the number of occurrences reaches zero the record may be deleted from the table 490. This field is useful for determining, after deleting an article, if the query value is still valid.

The library research engine 150 preferably uses a suitable conventional database for full text searches which may comprise a commercially available database such as Verity Search '97 Software Developer's Toolkit Version 2.2.3, from Verity Inc., 894 Ross Drive, Sunnyvale, CA, USA. That way if a user wants to search for the existence of any word in any of the books in his system, a particular book is able to respond with its articles that answer the query.

The Query Type Table 445 lists the available query types for the queries 604. The data in the Query Type Table 445 is read by Query Type Data Objects 531. The Query Type table 445 is part of the template 608 and preferably includes the following fields:

i. External Name 446: The name of the

query as it is seen by the user.

ii. Internal Name 447: The name of the query as it is used internally by the data layer 211.

iii. Implementation Type 448: The type of the query, e.g. one of the following: Full text, section, string, ID and hierarchical ID.

Query Tables 420, 467 define the set of valid items for a given query. These tables are part of the template 608.

The Query ID table 420 stores all possible values for a query of type ID. There is a different Query ID table for every query that has an implementation type of ID. The data in the Query ID table 420 is read by Query ID Data Objects 543. Each Query ID table preferably includes the following fields:

a. ID 421: Unique ID for each item; and

b. Name 422: String to appear in the GUI for this item.

The Query Hierarchical ID Table 467 stores all possible values for a query of type Hierarchical ID. There is a different Query Hierarchical ID table for every query that has an implementation type of Hierarchical ID. The data in the table is read by Query Hierarchical ID Data Objects 541. Table 467 preferably includes the following fields:

a. ID 468: Unique ID for item

b. Parent ID 469: Pointer to parent Subject.

c. Son Number 470: Integer indicating the position of the Subject in the list of sons for the parent. There is an index on this field combined with the Parent ID field. This allows random access

d. Number of Sons 471: Integer indicating the total number of direct sons the Subject has. This is useful for the title browser in determining the weight of a Subject and to determine what to display without actually traversing the tree. It is also used in the traver-

sal of the tree to determine the last son.

e. Name 472: String to appear in the GUI for this subject.

The Libentry (Library entry) table 485 stores information useful for adding a new book to the Library Table 493. The fields of the Libentry table 485 preferably include the following:

a. Tempname 487: The name of the template 608 for the book. This field is copied to Tempname field 551 in the library table 493.

b. ISBN 488: The international standard book number. Copied to ISBN field 553 in Library table 493.

c. Name 486: The title of the book, copied to Name field 495 in library table 493.

d. Booktype 489: Value indicating the implementation method for the book. This value is copied to Booktype field 499 in the Library Table.

The preference table 804 stores system-wide settings. Some of these preferences may be set and some may be alterable by the user in the Options Dialog. The preference table 804 preferably includes the following fields:

a. Name 805 : The name of the preference.

b. Value 806: The value to be used for the preference.

Fig. 7 is a diagram illustrating dataflow between the data layer 211 of Fig. 2, and the GUI/navigator interface 213 of Fig. 2, via the navigator layer 212 of Fig. 2.

A Data Supplier 704 is another data structure, which allows for the interaction between the Navigator layer and the Data layer. A Data Supplier is an object that knows how to create Data Objects. There are two basic kinds of Data Suppliers - the Hierarchical Data Supplier and the List Data Supplier.

The usage of these two data structures, the

Hierarchical Data Supplier and the List Data Supplier, enables the same code to be used when dealing with all different kinds of data. An example is the list of query results, or the list of all the videos. The source of the data in these two cases is different, which means that different instances of the List Data Supplier is used. But this is the only difference. The work of the Navigator layer is exactly the same in both of the cases.

The Data Supplier data structure hides from the Navigator layer all the complexity of the Data layer internal structure.

The Hierarchical Data Supplier is operative to create or add a specific Data Object as a son for the given parent Data Object. The son object is identified by its number among all the son objects of the given parent. The Hierarchical Data Supplier also knows to traverse a hierarchical tree including going from leaf to leaf and getting the root and the list of ancestors for a given Data Object. For example if the parent object is a Book 100, the son number 3 of this parent is the third chapter of the Book.

GetNext and GetPrevious methods are called from the List Data Supplier to retrieve Data Objects one by one. List Data Suppliers also go to a specific Data Object in the list based on any one of position, the Data Object, or based on a string (for Follow Me). For example, a list data supplier may comprise the results of a query.

Fig. 8 illustrates data relationships between Navigators 212 and containers 801. The ability to manage all of the books in a user Virtual library and provide real time responses for all books is handled by a layer called the Navigator (layer 212 in Fig. 2). The aim of Navigator is to allow for the presentation of data, possibly merged from multiple books, to display to the Researcher. The Navigator also is responsible for effi-

ciently caching and discarding data in order to best utilize memory and give quick response to the user. A Container 801 is a data structure which holds all of the Data Objects that belong to one hierarchy. The Navigator layer is responsible for creating Containers and filling them with Data Objects.

The Data Objects, which have been placed in a Container, are to be used by the Graphical Interface layer 214 of Fig. 2. An example of where the Graphical Interface Layer 214 displays the Data Objects in a Container 801 is in the Browser window of the Control Pane, i.e. in the window which displays the media item. This is where the Data Objects of the Book hierarchy are displayed in a tree format. Each Data Object is represented by a line of text together with a small icon. Some of the lines also have an Expand-Collapse button which indicates that the corresponding Data Object is expandable. If a Data Object is in collapsed state it is regarded as a leaf. If a Data Object is in expanded state is regarded as a branch and the Data Objects which are its sons are shown underneath it.

Within the Navigator layer 212 of Fig. 2 there is an object called a Navigator 212, which holds a position inside a Container. The Graphical Interface layer 214 can retrieve the current Data Object of a Navigator 212.

The Navigator performs two very useful methods - Get Next and Get Previous. These methods change the current Data Object of the Navigator. The Graphical Interface Layer 214 communicates with the Navigator Layer 212 by using these two methods.

The term "Next" data object refers to the first son of a current data object, if the current data object has sons, and otherwise, "next" is the next brother. If there are no next ("younger") brothers then "next" is the next brother of the parent, and so, continuing up the

tree until a next brother of some ancestor is found or until the end of the tree is reached in which case there is no "next" data object. "Previous" refers to the last son of the previous brother. If the previous brother does not have sons then "previous" refers to the previous parent, and so on, until the root of the tree is reached. If the root of the tree is reached, there is no "previous". The "next" and "previous" data objects for a current data object are typically computed using hierarchical information stored in the parent field 469, number of children field 471 and child number field 470 of the query hierarchical ID table 467 of the current object.

As an example, consider the task of painting the content of the Browser Window that shows the hierarchy of a Book. The Graphical Interface layer 214, in this Example, is assumed to hold a Navigator 212 whose current (initial) Data Object corresponds to the top line of the window. In such a case the drawing task comprises the following steps (1) to (3):

1) The current Data Object of the Navigator is retrieved and the corresponding line is drawn. The Data Object itself has all the information that is needed to draw the corresponding line, (i.e., initially, the top line) of the Browser Window showing the hierarchy of the current book. This information comprises the following three items:

a) Text - The name of the Data Object.

b) Level of current data object in the hierarchy of all data objects held by the navigator - This information is important because the hierarchy level determines the offset, from the left edge of the window, at which the current data object is shown.

c) Expand-collapse state of the Data Object. Typically, one of two possible buttons is drawn at the beginning of the line to indicate that the current data object has children which will or will not be shown.

If no button is drawn at the beginning of the line this typically indicates that the current data object does not have children.

2) Now the Navigator is moved to the next Data Object (corresponding to the Browser Window line below the line associated with the current Data Object). The Navigator moves to the next Data Object by calling its Get Next method.

The term "line" refers to content lines or lines of text and does not refer to the rows of pixels which make up the Browser Window.

3) Steps 1) and 2) are repeated until the window is filled.

A particular advantage of a preferred embodiment of the present invention which includes the Navigator data structure is that the Graphical Interface layer 214 does not need to be "aware" of containers or "understand" the structure of a Container. Only the Navigator 212 knows how to transverse a Container and retrieves the relevant information directly from the Container.

When a Container 801 is created it is not immediately filled with Data Objects 511. The creation of a Data Object 511 is a relatively heavy operation, so a Container 801 is preferably filled with Data Objects only when the user of the navigator 212needs a Data Object. Returning to the example with the window that shows the hierarchy of a Book, it is seen that calling the GetNext method on a Navigator filled the window. Each such call to the GetNext method causes the creation of a Data Object 511. So after the first show there are only about 20 actually loaded Data Objects. All other Data Objects of the Container 801 are logically present in the sense that, for example, the range of the scroll bar takes them in account. But these Data Objects are not physically created till the user scrolls to the corresponding location.

The present invention provides a preferred method for searching through electronic information which includes storing a multiplicity of books each as a separate object and performing an electronic researching operation. This operation typically includes searching individual ones of the multiplicity of books and generating a book search output and merging book search outputs of a plurality of searches performed by the book searcher on a plurality of user-selected books from among the multiplicity of books, thereby to generate a global search output. Merging is discussed below with reference to Fig. 9.

Fig. 9 illustrates Merging of Lists of Data Suppliers 802 which is typically performed within Navigator Layer 214.

When there is just one book on the Research Desk then the corresponding List Data Supplier can give the results one by one. The first few Data Objects can be easily retrieved from the Container.

But what if the user moved the scroll bar thumb to the middle of the result list? How can a Data Object be retrieved from the middle of a result list? Of course it would be possible to retrieve all the Data Objects one by one until reaching the required Data Object. But the list could be very long and preferably, loading Data Objects should be avoided until they are really needed. To take care of this the List Data Supplier has a method to retrieve a Data Object by its sequential number in the list. The total number of Data Objects in the list is known and therefore it is possible to retrieve a Data Object from the middle of the list.

When there is more than one book on the Research Desk then the query results are typically merged into one list to display them to the user. First a List Data Supplier is created for each Book. Since there is more than one book a "List of Data Suppliers" object is

also generated.

As an example, each Book would be represented by one List Data Supplier object. All the List Data Suppliers are connected in a List of Data Suppliers object. Here again it is simple to show the few first items in the merged list of results. The first items from each Data Supplier are retrieved and they are added to the Container in correct order. But how can the system scroll to the middle of the merged list? In an example with one Book it is possible to simply call the appropriate method to retrieve a Data Object by its number. In the case of more than one book, the same thing cannot be done. To take an extreme example, each book may contain articles whose names begin with one letter. There is a Book for the letter A, a Book for the letter B and so on. If an article were simply picked from the middle of each Book and the results merged together it would be obviously wrong. To solve this problem an iteration method is used.

Merging in few levels. 701

A List of Data Suppliers has all the methods that a single List Data Supplier has. So a List Data Supplier is created that is implemented as a List of Data Suppliers. Now again a few such Data Suppliers can be connected to one List of Data Suppliers.

An example could be when viewing Media. Here the user can see all the media items from all the Books. For each Book there is a Media List for each kind of media, that is a list of Pictures, a list of Videos etc. All of these lists are connected to one Media List of the Book. All of the Media Lists for all of the Books are connected to one Media List. The List Data Supplier data structure allows the same code to be used for merging at all levels.

For clarity, Figs. 7 - 9 are now summarized.

Fig. 7 demonstrates a preferred flow of infor-

mation, comprising data objects, from data layer 211 to navigator/GUI interface layer 213. First, data objects are shown passing from a book 100 via data suppliers 704 in the data layer 211 to a merge process 701 in the navigator 212. The merge process is operative to receive data objects, from several books 100, which data objects have been passed up to the navigator/GUI interface layer 213. The merge process generates, from these objects, a single unified list of data objects. A preferred embodiment of the merge process 701 is described in detail with reference to Fig. 9. In the example illustrated in Fig. 7, four dataflows are shown, only one of which (the leftmost dataflow) requires merging because only the leftmost process involves data objects from a plurality of books. For the processes which do not require merging, information typically passes directly from the data layer 211 to the navigator-GUI interface layer 213. For example, book data objects 512 and bookshelf data objects 511 (Fig. 5B) may pass directly from the bookcase 602 to layer 213. Binder data objects, media data objects 503 and URL media data objects 505 (Fig. 5A) may pass directly from the briefcase 603 to layer 213. Book data objects may pass directly from the library 601 to layer 213.

Fig. 8 illustrates a container 801 holding a hierarchical tree of data objects which may have been merged from several books 100. Several navigators 212 point to different current data objects within container 801. This allows the various navigators to share data objects and reduces resources devoted to reading of data objects from the database, thereby conserving memory storage and enhancing speed.

Fig. 9 illustrates a two-level merge process in which the container 801 receives data from a list of data suppliers 802 each of which in turn gets its data from a list of data suppliers 802 by way of one or more data suppliers 704.

Figs. 10 - 60 are screen display generated by a preferred embodiment of the present invention. Specifically:

Fig. 10 is a pictorial illustration of a screen display of a main menu, generated in accordance with a preferred embodiment of the present invention.

Fig. 11 is a pictorial illustration of a Search View screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 12 is a pictorial illustration of a Search Full Text screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 13 is a pictorial illustration of a Search Keyword screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 14 is a pictorial illustration of a Search Natural Query screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 15 is a pictorial illustration of a Search By Phrase screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 16 is a pictorial illustration of a Search - Sounds Like screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 17 is a pictorial illustration of a Search By Title screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 18 is a pictorial illustration of a Search By Topic screen display, reached from the main menu of

Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 19 is a pictorial illustration of a Media View screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 20 is a pictorial illustration of a Media Animation screen display, reached from the Media View screen of Fig. 19, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 21 is a pictorial illustration of an Animation -- Full Size screen display, reached from the Media Animation screen of Fig. 20, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 22 is a pictorial illustration of a Media Video screen display, reached from the Media View screen of Fig. 19, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 23 is a pictorial illustration of a Media Sound screen display, reached from the Media View screen of Fig. 19, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 24 is a pictorial illustration of a Media Portrait Photo screen display, reached from the Media View screen of Fig. 19, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 25 is a pictorial illustration of a Media Photo screen display, reached from the Media View screen of Fig. 19, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 26 is a pictorial illustration of a Media Music screen display, reached from the Media View screen of Fig. 19, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 27 is a pictorial illustration of a Media

Flags screen display, reached from the Media View screen of Fig. 19, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 28 is a pictorial illustration of a Media Map screen display, reached from the Media View screen of Fig. 19, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 29 is a pictorial illustration of a Full Screen Map screen display, reached from the Media Map screen of Fig. 28, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 30 is a pictorial illustration of a Book View screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 31 is a pictorial illustration of an Article screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 32 is a pictorial illustration of an Article - Full Screen display, reached from the Article screen display of Fig. 31, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 33 is a pictorial illustration of a Follow Me screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 34 is a pictorial illustration of a Binder screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 35 is a pictorial illustration of a Library -- Graphical Interface screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present inven-

tion.

Fig. 36 is a pictorial illustration of a Library -- Standard Interface screen display, reached from the Library -- Graphical Interface screen display of Fig. 35, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 37 is a pictorial illustration of a Library -- Standard Interface screen display, reached from the Library -- List of Books screen display of Fig. 35, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 38 is a pictorial illustration of a Digital Book screen display, reached from the main menu of Fig. 10, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 39 is a pictorial illustration of a Bookstore -- Book Information screen display, reached from the Digital Bookstore screen display of Fig. 38, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 40 is a pictorial illustration of a Book Adding screen display, reached from the Bookstore -- Book Information screen display of Fig. 39, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 41 is a pictorial illustration of a Book Download screen display, reached from the Book Adding screen display of Fig. 40, which is generated in accordance with a preferred embodiment of the present invention. Fig. 41 is similar to Fig. 35 except that the status bar shows that a book is being downloaded from an electronic bookstore into the user's library.

Fig. 42 is a pictorial illustration of a New Shelf -- New Book screen display, reached from the Book Download screen display of Fig. 41, which is generated in accordance with a preferred embodiment of the present

invention.

Fig. 43 is a pictorial illustration of a New Book In Library screen display, reached from the New Shelf -- New Book screen display of Fig. 42, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 44 is a pictorial illustration of an Article From Book screen display, reached from the New Book In Library screen display of Fig. 43, which is generated in accordance with a preferred embodiment of the present invention.

Fig. 45 is a "Book Properties" screen display arrived at by selecting the View option in substantially any of the screen displays of Figs. 10 - 60, and then selecting from the resulting View menu, the "Current Book Properties" option. The screen display of Fig. 45 preferably displays general information about a current book, its cover, and an overview of the book.

Fig. 46 is a "Book properties -- updates" screen display arrived at by selecting the "Updates" option in the screen display of Fig. 45. The screen display of Fig. 45 display information about the last update of the book.

Fig. 47 is an "Options - general" screen display arrived at by selecting the View option in substantially any of the screen displays of Figs. 10 - 60, and then selecting from the resulting View menu, the "Options" and subsequently the "general" options.

Fig. 48 is an "Options - display" screen display arrived at by selecting the View option in substantially any of the screen displays of Figs. 10 - 60, and then selecting from the resulting View menu, the "Options" and subsequently the "display" options.

Fig. 49 is an "Options - search" screen display arrived at by selecting the View option in substantially any of the screen displays of Figs. 10 - 60, and then

selecting from the resulting View menu, the "Options" and subsequently the "search" options.

Fig. 50 is an "Options - bookstore" screen display arrived at by selecting the View option in substantially any of the screen displays of Figs. 10 - 60, and then selecting from the resulting View menu, the "Options" and subsequently the "bookstore" options. The user is given an opportunity to change his default bookstore.

Fig. 51 is an "Options - Update" screen display arrived at by selecting the View option in substantially any of the screen displays of Figs. 10 - 60, and then selecting from the resulting View menu, the "Options" and subsequently the "update" options.

Fig. 52 is a screen display arrived at by clicking on the "view" option in the screen display of any of Figs. 22 - 28, 30 - 37, 41 - 51, 53 - 56 or 58 - 60.

Fig. 53 is a "File view" screen display arrived at by selecting the File option in substantially any of the screen displays of Figs. 10 - 60. As shown, the screen display of Fig. 53 includes a menu offering the user the following options: Internet bookstore (takes the user to his default Internet bookstore), Update from Internet (allows use to update any book in his library), New binder, Print, Page setup (for setting up of a page is to be printed) and Exit.

Fig. 54 is an "Edit file" screen display arrived at by selecting the Edit option in substantially any of the screen displays of Figs. 10 - 60. As shown, the screen display of Fig. 54 includes a menu offering the user the following options: Select All (allows user to select entire article) and Copy (allows user to copy whatever has been selected).

Fig. 55 is a "menu from article" screen display arrived at by selecting the View option in substantially

any of the screen displays of Figs. 10 - 60. As shown, the screen display of Fig. 55 includes a current article in a window with the menu on the left in another window. The menu offers the user the following options: Previous (view the previous article), Next (view the next article), Binder (add the article to an existing binder or create a new binder). The user can also print the article.

Fig. 56 is a "Help menu" screen display arrived at by selecting the Help option in substantially any of the screen displays of Figs. 10 - 60. As shown, the screen display of Fig. 56 includes a menu offering the user the following options: Help topics, User's manual, Tour guide allowing the user to view the help topics, user's manual and tour guide respectively.

Fig. 57 is a "Tour guide" screen display arrived at by selecting the "tour guide" option in the menu of Fig. 56;

Fig. 58 is a screen display arrived at by pressing the "context" button in the righthand Article window in the screen display of Fig. 55. Pressing the "context" button results in the system showing the user the context of the item display in the window. For example, if the article is a sub-article or a photo, the context option allows the user to see the article which the item is attached to.

Fig. 59 is a screen display arrived at by pressing the "related" button in the righthand Article window in the screen display of Fig. 55. The screen display of Fig. 59 displays keywords relating to the article. Choosing one of these keywords initiates a search for all articles with the specified keyword.

Fig. 60 is a screen display arrived at by pressing the "media" button in the righthand Article window in the screen display of Fig. 55. The screen display of Fig. 60 lists all media in the currently

displayed article. Selection of one of the media in the list results in display of that media.

The term "graphical library" refers to the 2D library component of GUI 214. The graphical library is typically a 2-D library. The main elements in the graphical library are a Bookcase with Shelves (with Books), a Research Desk, a Librarian, an Uncatalogued (Unshelved Books) Desk and a Recycled Desk.

The minimum screen size of the graphical library where all of the main elements fits in is 400 x 600 pixels. The user is able to make the window smaller that, but then elements are cut off from view.

As the user drags the screen to be larger than 400 by 600 pixels parts of the background stretch and the Shelves are able to stretch vertically and horizontally as fitting. As the screen is stretched vertically new shelves are added to the top of the bookcase when there is room for them. As the screen is stretched horizontally each existing shelf gets longer, allowing the user to view more books on the shelves at a time. As the screen gets larger the Bookcase with Shelves always remain left justified and the Research Desk remains right justified.

When the user is in the Research Center and opens the Graphical Library the size of the window that was present for the Research Center remains for the Library. If the Research Center is smaller than 400 x 600 pixels then the full library is not in view and the user stretches the screen to view all of its elements.

The functionality in the graphical library parallels closely the functionality in the standard library dialog box.

Bookcase with Shelves: There is a bookcase with shelves in a vertical alphabetical scrolling list. Within each shelf the user is able to scroll horizontally to see all of the books in that shelf. The books within each shelf appear in alphabetical order.

Each shelf is have a drop down list box on it listing all of the shelves in the bookcase. This list is drop down when the user left clicks on the name of the shelf (there is a down arrow there as well). The user can choose any of these shelves and it appears in that spot replacing the previous shelf that is there. In this case the previous shelf appears in the slot above the new chosen one. This causes the shelves to be out of alphabetical order. The shelves remain in the order that the user has chosen to put them in even between sessions. There is a way for the user to resort the shelves to alphabetical order again if desired.

The spines of the books appear on the bookshelves, with the names of the books listed sideways on the spine. (As the user rolls his cursor over the spine of a book a bitmap of the cover of that book pops up, allowing the user to view the title of the book in an easier fashion - this may be chosen from a right-click menu instead - to be decided).

The main bitmap of a book spine is stored within the system. With the Publisher's Tool (Fig. 63), the publisher is to define the color for this spine and the name to appear on the spine. The publisher is also to provide the bitmap for the cover of the book, which has to be made with certain specifications (maximum size, etc.).

Optionally, there are different size book spines depending on the length of the title. If this is the case it is to be decided as to whether the Publisher would have the choice of a few different sizes of spines to choose from depending on the length of the title of the book. Or the Publisher would not choose the size of the spine and instead the program would automatically choose the size of the spine depending on the amount of text on it).

New Shelf: The user is able to create a new

shelf in the following ways:

a. Right click on any shelf has the option of creating a new shelf.

b. The librarian's menu has the option of creating a new shelf.

c. The drop down list box on each shelf has the option of creating a new shelf in the list.

The menu bar on the top of the display screen has the option of creating a new shelf.

d. Delete Shelf: The user is able to delete an existing shelf. If the user chooses to delete a shelf and any of its books do not reside on a different shelf as well, then those books appear on the Uncatalogued Book Desk.

The user is able to delete a shelf in the following ways:

Right click on a shelf has the option to delete that shelf.

The librarian's menu has the option to delete a shelf.

Shelf Properties:

The user is able to right click on a shelf and have the option to view its properties. The properties for now include the name of the book and a description of the book.

Copying a Book to Another Shelf: Dragging a book to another location by default copies the book, as opposed to moving the book.

The user can copy a book to another shelf in the following ways:

Select the book and drag it to another shelf by scrolling the book to the desired shelf.

Choose a different shelf in the library and change that shelf to be the desired destination shelf for the book by choosing it in the drop down list box of shelves. Then either:

1. Drag the book from the original shelf to the destination shelf;
2. Right click on the book and choose copy and go to the destination shelf and paste the book; or
3. Select a book, choose copy from the menu above, then go to the destination shelf and paste the book.

Select a book and drag it to the librarian's desk. The user can then drag the book to another shelf, or have the librarian auto shelve the book, which would place the book on its default shelf.

Right click on a book gives an option to copy a book. The user can then go to the desired destination shelf and paste the book there (with right click Paste or menu item Paste). Or the user can paste the book to the librarian's desk and then to a shelf.

Select a book and choose Copy from a menu item. The user can then go to the desired destination shelf and paste the book there (with right click Paste or menu item Paste). Or the user can paste the book to the librarian's desk and then to a shelf.

Moving a Book to Another Shelf: The user can move a book to another shelf in the following ways:

Choose a different shelf in the library and change that shelf to be the desired destination shelf for the book by choosing it in the drop down list box of shelves. Then either:

1. Right click on the book and choose Move and go to the destination shelf and paste the book. Or the user can paste the book to the librarian's desk first and then to a shelf.

2. Select a book, choose Move from the menu above, then go to the destination shelf and paste the book. Or the user can paste the book to the librarian's desk first and then to a shelf.

Remove a Book from a Shelf: The user is able to remove (delete/cut) a book from a shelf in the follow-

ing ways:

1. Right click on a book is the option to remove a book from a shelf. If the book does not reside on any other shelf then it appears on the librarian's desk.

Book Properties: The user can right click on a book and have the option to view its properties. Book properties could include the Name of the Publisher, the Date of Publication, Copyright information, etc.

Book Cover: When the user rolls the cursor over a book a picture of the book's cover pops up. Or the user can right click on a book and has the option to view a graphic of its book cover.

Research Desk: This desk contains all of the books that the user wants to use in the Research Center.

When a book is on the research desk then it still appears on the shelf where it came from as well, just the copy on the book on the shelf is grayed out letting the user know that it is on the research desk. If the book resides on more than one shelf, then all of the copies of that book would be grayed out on all of the shelves where it appears.

Add Books to Research Desk: The user is able to drag a book from a shelf to the research desk, or he can drag a whole shelf of books to the research desk. If a whole shelf is dragged then all of its books appear on the research desk.

There is a maximum number of books in view at a time on the Research Desk, depending on the size of the screen. If the number of books goes above this maximum then scroll arrows appear allowing the user to scroll the books.

Remove Books: If the user would like to remove a book from the research desk then he can drag it to the librarian the librarian automatically puts it back on the shelf (or shelves) where it came from.

The user can also drag a book back to a shelf where it was before if the shelf is in view.

The user can also right click on the Research Desk and their is an option to remove all of its books (clear the desk). If this is done then all of the books would return to the shelves that they were on. If there was a book on the Research Desk that had never been shelved then it would appear on the Uncatalogued Book Desk.

Save as Shelf: The user can save the current set of books on the Research Desk as a Shelf by choosing this option from the right click menu of the Research Desk. Another option is to allow the user to drag all of the books in the Research Center to the bookcase, which would create a new shelf with these books (not implemented now).

The librarian is an animated person who is available to help the user in using the graphical library. During idle time the librarian makes random motions such as yawning or blinking.

Librarian's Welcome/Help: When the user goes into the graphical library for the first time the Librarian gives an introduction as to what can be done in the library. In this introduction the librarian goes around to all of the places in the library and describe what can be done with them. The next time the user goes into the graphical library this introduction does not automatically appear, but the user has an easy way to view it again if desired.

If the user would like to get help on a particular area in the library then he is able to do so by dragging the librarian to that place in the library. When the librarian is dragged to the different spots the librarian then offers help information about that particular spot. In the librarian's welcome help the librarian mentions this option.

If the user would like to know more about a certain book in the library then he can drag the librarian to that book and the librarian gives a short description of the book. Along with giving a description of the book a picture of the book's cover pops up plus the text of what the librarian is saying. When the librarian finishes reading it then the book cover and text disappears.

Librarian as Assistant: At any time the user can right click on the librarian to get a pop up list of the things that the librarian can do. The items in this list includes:

Help - to see the main introduction to the library that was mentioned above.

Catalog New Books - To shelve any new books or other unshelved books that reside on the Uncatalogued Book Desk. If the library shelves a book then that book goes onto a predefined shelf, which was preferably defined in the Publisher's Tool of Fig. 63.

Save Uncatalogued Books As Shelf - The user has the option of saving all of the books on the Uncatalogued Book Desk as a shelf. These could be new books, other unshelved books or a combination of the two. Once books are saved on a shelf they do not appear anymore on the Uncatalogued Book Desk.

Add Book - To add a book to the library.

Create a New Shelf - To create a new shelf in the library.

Save Research Desk as Shelf

Remove Book From Library - These books would then go into the Recycled Desk.

Librarian as Drop Target: The librarian serves as a drop target for books.

If a book is dragged onto the librarian from the Research Desk, Uncatalogued Book Desk or from the Recycled Desk then the librarian automatically shelves

the books. If the book had previously been shelved then the librarian returns the book to the shelf that it previously resided. If the book had not been previously shelved then the librarian places it on its default shelf.

If a book is dragged from a bookshelf to the librarian then the librarian could ask if the user would like information on the book or if he would like to reshelve the book on its default bookshelf.

Uncatalogued Book Desk: The Uncatalogued Book Desk is a desk where any new books and other unshelved books reside until the user either has the librarian shelve them or chooses to shelve them himself.

When new books are added to the library then they appear on the Uncatalogued Book Desk. The user then has the choice of placing the book on a shelf by himself, or having the librarian automatically place the book on a pre-defined shelf. The user can select a book (or books) and choose to have the librarian shelve the book(s) using the librarian's pop up menu. If the librarian shelves the book and the default shelf for that book does not exist yet in the library, then that shelf is automatically created and the new book is placed on it. If the user would like to shelve the book himself then he may either drag it to a pre-existing shelf, or he may create a new shelf and then drag the book to that shelf.

In addition to new books the Uncatalogued Book Desk may have other unshelved books on it. These would be books that the user has moved from the shelves and has not reshelved, or books that came from a deleted shelf. Like the new books, the user would have the option to shelve the books himself or he could have the librarian auto-shelve the books to their default shelves.

There is a maximum number of books that can appear on the Uncatalogued Book Desk at one time. If the user has put more than the maximum number of books on

this desk then arrows for scrolling appear. The books on this desk do not block the view of the shelves with books on it.

Recycled Desk: There is a Recycled Desk, which holds books that the user has decided to delete from the library.

Books can arrive to this desk from the librarian, from a right click choice on a book or from being dragged there. The user has to empty this desk to really delete a book from the library.

Adding Books to the Library: There is a graphic hotspot allowing the user to add books to the library. Books can also be added to the Library from a menu item. Books can be added either from a CD/DVD or from the Internet.

If the user chooses to add a book from the Internet whether or not a small window can be brought up with a Web browser in it offering hyperlinks to all of the sites where the user can go to browse/buy a book. This window could be small, expanded to full screen or reduced to an icon for easy re-opening. This window could be a graphic of a small computer screen.

If the user chooses to add a book from a CD, the system typically closes down in order to remove the DVD disk and load the CD with the new book on it. Then after choosing a new book the user typically removes the CD, reloads the DVD and start the system again. Or the program could run without its DVD in place, in which case certain features such as graphics from the DVD database would not be available until the DVD was placed in the drive again. If this is the case the user typically gets an appropriate message, recommending that the DVD disk be reloaded.

When a new book is added to the library and the system is started up, the new book is present on the Research Desk for immediate viewing. The book is not

shelved, and the user has to go to the library to shelve it. Along with residing on the Research Desk, the new book is also on the Librarian's Desk with some sort of label on it identifying it as a new book that has not been shelved. Once a new book is shelved that label disappears. A new book can be shelved either by giving it to the Librarian and having the Librarian shelve it, or by having the user drag it to a shelf.

Finding a Book: To find where a book resides in the library, that is which shelf or shelves it resides on.

In summary ,the graphical library functionality is typically as follows:

Right Clicks

Book:
- Copy
- Move
- Remove (from a Shelf)
- Remove From Library (with warnings)
- Properties
- Book Cover
- Return to Shelf (from the Research Desk or from the Librarian)

Shelf (on the name of the shelf):
- Copy Shelf
- New Shelf
- Delete Shelf
- Properties (can rename a shelf here)

Librarian:
- See Help introduction sequence
- Add Book to Library
- Shelve All Books (on Unshelved Book Desk)
- Create a New Shelf
- Remove book from Library and Place in Recycle Bin.

Uncatalogued Book Desk:
- Save Books as Shelf
- Auto Shelve All Books

Research Desk:
- Save As Shelf
- Return Books to Shelves (Clear Research Desk)

Menu Items:
- Copy Book
- Remove Book
- Paste Book
- Add Book to Library
- Delete Book From Library
- New Shelf

A preferred embodiment of the 2D library is now described in detail.

Components:
* Librarian
* Research desk
* Shelves
* New book stack
* Recycle bin
* Book
* Add a book button
* Research center button

Hotspot areas
So that the user will know what areas are clickable or usable, all the usable areas will have hotspots. There will be 2 types of hotspot areas.

1. Click for help on the item
2. Click to activate the item

Hotspot areas are recognized through a different cursor rollover. There are 2 different types of cursors.

The components are divided up as follows for each of the different rollovers:

Click for help on the item

* Research Desk
* New book stack
* Recycle bin
* Non used areas of the shelves

If any of the above items are clicked on, then a context sensitive help dialog pops up.

Click to activate the item

* Librarian
* Book
* Shelf
* Add book button
* Research center button

Some items above also have left click activations, described in detail below.

Clicking on the librarian at any time will provide the following popup menu:

Get a new book from the Internet
Create a new book shelf
Automatically catalog new books
Help

Clicking on a Book

General

Books can reside in the following places:

1. Shelf
2. New book stack

3. Research desk
4. Recycle bin

The following activation methods can be used on a book

Click: This will cause the book properties dialog to be displayed

Click and drag: Begin to drag the book

Right click: Will display a popup menu. This menu will vary depending on where the book is located.

Right click and drag

Begin drag. If dropping on a shelf then show a copy/move menu.

Book Drop Targets: Books can be dropped on any of the above mentioned places from any of the above mentioned places.

* When dropped on a book shelf it is placed on that shelf. If dragged from another book shelf then with a left click drag it will be copied to that shelf.
* When dropped on the Recycle bin, it is removed from all shelves and placed in the recycle bin.
* When dropped on the Research desk it is placed on the research desk, and can then be queried and used.

When a book is dropped on the librarian from the following places, then the following popup menus will show:

a. From New books stack to librarian:

Read the book

Place book on default shelf

Book properties

b. From Research desk to librarian:

Read the book

Place book on default shelf

Return book to shelf (if the book is not on the new stack)

Book properties

c. From Shelf to librarian:
Read the book
Place book on default shelf
Return book from Shelf
Book properties
Delete the book

d. From Recycle Bin to librarian:
Read the book
Place book on default shelf
Book properties

Right click Menu From Shelf: When a book is on a shelf and the right click button is clicked, then the following popup menu will appear:

Read the book
Copy to clipboard
Delete book from the library
Remove book from the shelf
Book properties
Book cover

Right click Menu from new book stack When a book is on the new book stack and the right click button is clicked, then the following popup menu will appear:

Copy to clipboard
Automatically shelve the book
Delete book from the library
Book properties
Book cover

Right click Menu from research desk: When a book is on the research desk and the right click button is clicked, then the following popup menu will appear:

Copy to clipboard
Return book to shelve
Delete book from the library

Book properties
Book cover

Right click Menu from Recycle bin: When a book is on the recycle bin and the right click button is clicked, then the following popup menu will appear:

Copy to clipboard
Return book to shelve
Delete book from the library
Book properties
Book cover

The book properties dialog typically comprises a property sheet dialog box with 2 basic pages:

1. General. In this property page there will be all the basic details about the book. e.g., author, Dewey number etc.

2. Cover. This page will contain a mini HTML browser that will show a flash animation of the book. There will be a button to permit the user to go to full screen.

Clicking on a Book shelf: The following activation methods can be used on a book: Click and drag, and Begin to drag the book shelf.

Right click: Displays a popup menu. This menu will vary depending on where the book is located. This will be examined in the next few sections.

Dragging a shelf: In general a shelf can be dragged to any place that a book can be dragged to. The result will be that an enumeration operation will take place. i.e.. The action will take effect on all the books in the shelf.

When a shelf is dragged to the Librarian then the following pop-up menu will show:

Place all books on the Research desk

Delete the shelf
Shelf properties

Right click menu on a shelf
Copy shelf
Create a new shelf
Delete the shelf
Shelf properties

The Research Center component of GUI 214 is now described. In the research center, the user searches his active set of books for the articles that most interest him. He has several tools to assist him in his search including a keyword search and a subject/topic search. He can also view articles, display their associated media and jump between associated articles. The Research Center typically comprises two main components:

a. The Browser List which allows him to search for items and select them for viewing, and

b. the Display Area where he can view the item.

There is also a Status Bar on the bottom of the Research Center with various functionality, and a standard type menu bar at the top of the screen.

The Browser List has 4 different tabs to choose from. For each tab the information in the Browser List is sorted differently.

For most of the tab views there is collapse/expand functionality for the items in the Browser List. The user can expand a book in the browser to view its parts, sections, chapters, chapter sub-headings, articles, and at the lowest level, associated media using a collapse/expand mechanism. Any item that has children in the book hierarchy is able to be clicked on in order to expand the item in the Browser List and display its children. Any item that has children displayed can be

collapsed in order to hide the children and not display them in the Browser List.

Books 100 can always be expandable. Media Data Objects 202, 203 and 204 can only be expanded if they have Associated Media Items 205. Associated Media Items 205 typically cannot be expanded.

There are small icons to the left of each item listed in the title browser, telling the user what type of item it is. In one embodiment, the icons are: book (closed and opened icons), chapter without information attached to it (closed and opened icons), chapter with information attached to it, text, photo, video, map, speech, music, animation, flag, media album/slide show.

The titles displayed in the Browser List are taken from the Media Groups 204, Media Elements 202, Media Back Matter 203 and Associated Media Items 205 for the book. The user can select any Media Group 204, Media Element 202 or Associated Media item 205 to be displayed in the Display Area. The user can also select the book title in which case the book cover is displayed in the display area.

The structure of the book, that is its break-down and how it is displayed in the Browser List, is defined by the publisher using the Publisher's Tool of Fig. 63.

The Browser List area can be made larger by dragging it to the right with the slide bar (and the Display Area gets smaller in proportion). When the window of the system is dragged to become larger, the Browser List only gets longer, and not wider. The Display Area gets longer and wider.

If an item listed in the Browser List has a title that is long so it does not all appear in the Browser List, then when the user rolls the cursor over this item in the list then that name alone elongates to be viewed. (There may also be a horizontal scroll bar on

the bottom of the Browser List).

Book View: The main default view in the Browser List is the Book view.

Here all of the books that the user has selected to be active are listed in the browser in alphabetical order. There is collapse/expand here where the user is able to open up a book into chapters or articles, etc., as described above, to view the contents of that book.

There is eventually a Book icon at the root of the tree. Next to this icon is written the text "Research Desk", and next to that is listed the number of books that are currently in the Research Desk.

There is not be a follow me function in this view.

If the user would like to search for something specific then there are several other views in the browser that can help him to arrive at the information that he wants. The options include searching by keyword, full text, topic or media.

Search View: The query system is designed to give meaningful results to the user. The system preferably provides four different choices to choose from in the Search tab, allowing him to search for information in different ways. There are 3 radio button choices allowing the user different ways to perform a search.

For the 3 radio buttons there is a typical full text search, a hopefully more meaningful search called a keyword query and a search by topic.

Full Text Search: When the user chooses the full text radio button he is able to type in one or more words, hit the Find button, and see the results in the Browser List in alphabetical order.

There are three options for searching by text. They are to Search for text within the titles only, to search for text within the whole article and to search

for text with a natural language query. There is an advanced button for the text searches, which brings up more search options. These advanced options change depending on which type of text search was chosen.

When searching by text the user can enter more than one word, and attach words together using the Boolean operations of And, Or and And Not. As a help to the user there is an arrow to the right of the type box which brings down a menu offering these 3 choices. Choosing one of these choices places that word (And, Or or And Not) in the type box. The user can type in the word as well, the list is just there as an aid.

When the user searches within titles only the titles (of books, articles, chapters, media, etc.) that have the word or words searched for appear in the Title Browser result list.

When the user searches with full text the Title Browser result list displays all of the items that have the specified word or words within them in any location of the text.

A Natural Language Query means that the user can type in a normal question sentence and get all of the items that match the results. For example the user could type into the text box: "What is the longest river in Africa?" The way this search actually works is to take all of the main words in the sentence and place "and's" between them. For example here the search would really be "Longest and River and Africa". The results in the Title Browser display all of the items that have these 3 words in their text.

There is follow me functionality in the browser list.

The drop down list for the Full Text combo box contains the previous Full Text searches performed in this session of using the system of the present invention.

Most systems today use full text searches. This method searches for words inside articles, and displays every article that has that word in it. This type of search may not always give the user an accurate result of what is actually being searched for since it is very general. Thus what happens is that the user gets too much information that needs to be filtered. Full word search is provided, but also, preferably, a keyword query, which should give a list containing more refined and accurate results.

The full text search has collapse/expand and a follow me on the highest level. If a parent and child items both have certain word appearing in them, then if that word is searched for then only the parent shows in the Title Browser with a plus sign next to it allowing its children to be viewed if desired.

There is eventually a Search Results icon at the root of the tree. Next to this icon is written the text "Search Results" and the number of search results.

The results in the Full Text Browser List can include articles, books, chapters, and other types of multimedia (such as Pictures, if they have that word in their caption).

When the user chooses to view an article from the Full Text Browser List in the Display Area, all of the instances of the searched for word in that article appears in a different color ink so they can be easily found. There is also a "Next" button allowing the user to view the next instance of the word in that article, which helps if the next instance is not presently on the screen (to be designed).

Key word Search: A keyword is a word that describes a main aspect of an item. Keywords are attached to such items as books, chapters, articles or pieces of multimedia. Each keyword is made up of one word only. To implement the keyword query each item, at every

level of the hierarchy, is allowed to have one or more keywords attached to it. Each viewable item has at least one keyword attached to it. Parent and child items are not allowed to have the same keyword attached to them. When conducting a query the user is able to use one or more keywords in his search.

For the keyword search the user is able to choose a keyword from a dropdown list of keywords. Or he can start to type in the combo list type box and the follow me function works, displaying the closest alphabetical match for that word. It is to be decided if the dropdown list is available for version 1. If it is not ready yet then a regular type box appears and the user can type in any word. If the typed in word does not exactly match a word in the keyword list then the search results are zero. After a keyword is chosen the user then presses the Find button.

There is eventually a Search Results icon at the root of the tree. Next to this icon is written the text "Search Results" and the number of search results.

It is also to be decided whether or not Version 1 is weighted keywords or not. If weighted keyword exist then the Browser List displays the keyword search results in order of relevance, and not in alphabetical order. Therefore there would be no follow me functionality. If weighted keywords are not available for version 1 then the Browser List displays the keyword search results in alphabetical order, and there is follow me functionality. Both weighted and non-weighted keywords would have the drop down combo box list if it is available.

Keywords may be attached using the Publisher's Tool of Fig. 63. There is an initial pre-defined list of keywords for the system, for the publishers to choose from, but the publisher is able to add additional keywords if needed.

Keyword is preferably weighted using the Publisher's Tool of Fig. 63. When the publisher attaches keywords to each item he also attaches a number indicating the relevance of the keyword to the item. This provides a weighting system, so when the user searches for a key word the resulting items in the Browser List are listed according to the weighting that the keyword had for each item. This design should give the user a list where the most relevant results are listed first. Both the weighted and not weighted keyword methods would have collapse/expand in the Browser List.

When new keywords are added to the system then they are added to this keyword list. The list of keywords appearing in the combo box reflects all of the keywords that are used in the current selection of books that the user has chosen. If a keyword has no items attached to it then it does not appear in the list.

Since a parent and child cannot have the same keyword attached to them, if two keywords are chosen one being attached to the parent and one to the child, then both of these items would appear in the Browser List. With the weighted method the one with the higher ranking would appear first in the list, since the list here is by weight and not by alphabetical order. With the non-weighted method the item that is higher alphabetically appears first in the list.

The Publisher's Tool of Fig. 63 creates key words for items. This technology could include taking main words out of an item's Master Title and out of the book's index to create keywords for each item.

Keywords are typically inherited. This means that if someone searches for Animals & Cat and Animals is a keyword attached to the Book and Cat is a keyword attached to a Media Element 202 in the Book then that Media Element 202 is returned. In other words, the article had the keyword Cat attached to it, but not the

keyword Animals attached to it. But since the article's parent Book had the keyword Animals attached to it the article met the requirements of both Cat & Animals.

There is also a stemming dictionary on the DVD that is produced by the editorial staff. This stemming dictionary connects all versions of a word or concept to the same basic keyword (e.g. color and color are connected to the basic keyword: color). When the publisher enters a keyword it is translated through the stemming dictionary to the base keyword and that keyword is stored with the book. When the user enters a keyword it is translated through the stemming dictionary to the base keyword and that keyword is used to search the book.

Keywords are defined in the language appropriate for the book. A French book has French keywords. When doing a query searching for an English keyword does NOT find articles that have the same keyword in French.

Topic Search: In the topic search the user can browse through a choice of subjects, where related items grouped together. In general a topic differs from a keyword in that it is broader.

For the Topic search the user sees a tree of topics to choose from. He then chooses a topic and open up its tree to view all of the sub-topics for that topic. The user can then select a sub-topic and press on the find button and see the results in the Browser List. Only one item can be chosen here at a time. (More than one topic and/or sub-topic can be chosen in the Advanced Search dialog box).

The subject results that are listed in the browser is in alphabetical order and can be of any type, a book, chapter, article or multimedia item. There is collapse/expand here and follow me functionality for the highest level of the tree.

There is eventually a Search Results icon at the root of the tree. Next to this icon is written the

text "Search Results" and the number of search results.

Topics can be associated with any type of media, and each media object may have an unlimited number of topics associated with it. A parent and a child media object cannot have the same topic attached to it.

Each template defines a superset of topics and sub-topics that are appropriate for books that use that template. Each book then specifies the set of topics that are actually connected to media objects in the book. When the user chooses a topic the list of topics that is presented to him is limited to those topics and sub-topics that are attached to media objects in the current selection of books.

If the user would like to know to which parent the subject item is attached, then there is a method (possibly a right-click) which displays a small window containing the hierarchical tree for that item.

Advanced Search: When the Advanced Search option is chosen a dialog box appears.

Here the user is able to use a combination of requests in his search. He can choose to add as many criteria to his list as he would like. The types of items to choose from are keywords, topics, media, word in text and word in title. The types of media that can be chosen in a search include both articles and all of the other multimedia types in the program.

There is a Boolean drop down list on the far left side of the box, allowing the user to choose "And", "Or", or "Not" for each item. The "And" and the "Or" is only be available for the second item and onward for the list.

The last list box to the right in the dialog box changes its list depending on which type of item is chosen. For example if keyword is chosen then this list displays all of the keywords available.

Items are then added to the list by pressing on

the "Add" button. Items can be deleted from the top list by choosing the item and clicking on the "Delete" button. The "Clear List" button removes all of the items from the above list to begin a new search.

The chosen search list is always saved when the user activates the search and leaves the search dialog box. (Maybe this is a user option - whether or not the previous search criteria are automatically saved). The "Clear List" button can then be pressed to start a new search. Preferably, the system provides a way to save multiple lists of search criteria, so the user is able to go back to that search easily.

The results of an advanced query search appears in the Search Browser List. When the user presses the OK button on the search dialog box then the simple search type box clears and remains clear until the user decided to do a simple search again. (To be decided: if there is a way to toggle back to the past simple search or not).

Search Methodology: With the simple search the default type of search is the keyword query type. If the keyword query does not bring satisfactory results to the user then he may conduct a full word search to get a broader range of results. The idea here is to try to give the user first a list of the most meaningful results for his search, but if he still desires to look further then he can go on to a full text search. The simple search and the search dialog box provides both options, so if the user wants to first do a full text search then he may. Since a preferred aspect of the system of the present invention is to provide a strong search engine, it is desirable to give the user these various options to ensure that he gets the information that he is looking for.

When the user conducts a keyword query each item that satisfies the query is displayed in the browser, along with a weighting that illustrates the rele-

vance of the item to the keywords being searched for. Items resulting from a keyword query can be books, chapters, articles or multimedia items. As mentioned above, if the weighting system cannot be implemented for the first version then the keyword query results is listed in alphabetical order with a follow me type box above the browser list.

The display in the browser for both types of searches is a list of all of the items that satisfy the search. Since whole books and chapters can also be the results of a query, these items can be listed here as well, and can be opened up to view their contents with collapse/expand. All of these items are displayed at the highest level (the far left) in the title browser regardless of their type. If the user would like to see the hierarchy of any item, (that is, the book, chapter, etc., from where it comes) then he is able to open up a small box allowing him to see the direct hierarchy for the item. In this small hierarchy the item that comes from the browser appears in a different color text.

Media View: This view allows the user to see any or all of the multimedia items that are in his current selection of books (the Research Desk). The user is able to filter on and off the different types of media that appears in the Browser List. As of now the list includes 8 types of media. They are: animations, flags, maps, media albums/slide shows, music, photos, speeches and videos. Articles are not included in this view. There is tool tip text as the user rolls the cursor over any of the media buttons telling what the icon stands for. If the current selection of books does not include any items of a certain media type, then that media type (button) is disabled.

The Browser List is in alphabetical order, with follow me functionality. There is no collapse/expand function here. All of the items in this list is displayed

at the highest level in the browser list, regardless of their type.

There is typically a Media Results icon at the root of the tree. Next to this icon is written the text "Media Results" and the number of media items in the tree.

Each Media Element 202 and Associated Media Item 205 can only be defined to be one type of media. The set of available media that can appear in the Title Browser is determined from the selection of active books. The superset of media types is described by the template. A parent and a child object cannot have the same media item attached to it.

This Media view displays only Media Elements 202 or Associated Media Items 205 and not embedded media. If the item is an associated media item then when it is displayed in the Display Area the article that the media item is attached to is displayed behind it in the Media Window.

Binder View: The Binder is where the user can save any media item or associated media item for future use. A Binder is like a named and saved notebook containing all of the chosen items that the user wants to keep together.

In the Binder tab, the top "Binders" list box contains the names of all of the previously created binders. When the user clicks on one of these binder names, all of the items in that binder appears in the list box below. The user can then choose to view any of these items in the Display Window to the right. The items in a binder can be any type of media object, including books, chapters article or multimedia items.

There is typically a Binder icon at the root of the tree. Next to this icon is written the text "Number of items in this Binder", and the number of items).

For the first time using the system of the

present invention, when the user clicks on the Binder tab there are no binders listed. The user has to create a new binder in order to begin adding items to a binder.

When the user first views the Binder tab in a session of using the system of the present invention, a list of all of the previously created Binders is displayed in the top list. None of the Binders in this list is selected. When the user double-clicks on a Binder in the list (or single clicks in a Binder in the list and clicks on the Open button) all of the items in that Binder appears in the list box below. Only one Binder may be open at any one time.

The Binder contains all of the items that the user has chosen to "Add to Binder". The user can add an item to a binder from the Browser List through the right click menu. The main way that the user is expected to add an item to the Binder is from the Display Window, where there is an easy to use "Add to Binder" button in the toolbar above all articles and multimedia items.

When the user starts a new session using the system of the present invention and then chooses to add an item to a binder, a dialog box appears asking the user which binder he would like the item to be added to. He can then choose an existing binder, or create a new binder to add items to.

Another way the user can choose a binder is to first go into the Binder tab and choose a binder (by either opening an existing one or creating a new one). Then when he adds items to a binder they is automatically added to the chosen binder.

For each session using the system of the present invention, once a binder is chosen by the user, that chosen binder is the binder that items are added to when the user adds an item to a binder. If the user would like to add an item to a different binder then he must first go back to the Binder tab and choose a different

binder, then any item added to a binder are added to the new chosen binder.

Options that are supported for Binders preferably include the following:

Open Binder: The user opens a previously saved binder by either by double-clicking on it in the "Binders" list, or by single clicking on it in the "Binders" list and clicking the "Open" button.

New Binder: The user can create a new binder by clicking on the "New" button. When the new button is clicked a highlighted typing area are available on the top of the binder list allowing the user to type a name for his binder. (Or there can be a dialog box allowing a description of the binder as well, as there is for a new shelf). The bottom list box are then cleared. The user then adds items to that binder by going back to the other tabs and the Display Area items and choosing Add to Binder.

Delete Binder: This button allows the user to delete a whole existing binder and all of its contents. The user can choose a binder in the "Binders" list and click on the "Delete" button.

Save binder: Actions are automatically saved in a binder as they are implemented.

Delete Item: The user can delete an item from a binder by choosing the item in the Browser List and clicking on the "Delete Item" button below the Browser List.

Reordering Items: The user can reorder items within a binder by choosing an item in a binder and then clicking on the up or down arrows to move that selected item up or down within the list.

If the selected item is the first item in the list then the Up button is disabled. If the selected item is the last item in the list then the Down button is disabled.

Print All: The user can print the contents of all of the items in a binder by choosing a binder and clicking on the "Print All Items" button below the Browser List.

Add Item From Another Binder: The user can copy or move an item from one binder to another binder. The set of active books may be stored with a Binder and reloaded when the Binder is loaded. This represents the model where a user interrupts his research and then wants to continue.

Optional features include:

* Printing a set of media objects from the Binder

* Adding user created Media Elements 202

* Allowing user to select parts of text articles to be placed in the Binder

Optionally a Binder is able to contain items in it that arrive from outside the system, such as links to the Internet or Word documents. For now if the user has called up a URL to view in the Display Window, then the Add to Binder button is disabled while that item is in the Display Window. Optionally, when an Internet page is added to a binder, the user to edit the title of the page so it is meaningful to the user when it is in the binder list. An aim for the binder is to be able to include items such as these so the user can create an all-encompassing research project using the system of the present invention.

Preferred Browser Functionalities are now described:

Hierarchy Window: After the user conducts a search or views a list of media he can, through the right-click menu, choose to view the hierarchy of any item that is on a lower level than the book level, if its book is not listed above it already. For example this means that if the user receives an article in his search

Browser List, then he can use the hierarchy functionality to see which book, chapter, etc. that article came from.

Next/Previous: The user is able to open up the Media Elements 202 listed in the title browser easily without having to scroll and choose each item in the browser list. This allows the user to examine, in turn, each item that was returned by a query or a set of filters.

The main usefulness of this function is when the user has opened a window in his Display Area to be viewed full screen, so the Browser List is not in view to choose an entry. The location of these buttons is therefore be on the Display Area window itself.

Add to Binder: This function allows the user to add a selected item in the title browser to the Binder. This can include adding a whole book or chapter to the binder.

A preferred embodiment of the Display Area is now described. The Display Area is the area that any item chosen in the Browser List can be displayed, including books, chapters, articles and associated media items. If the user chooses to view a Book itself then the book cover is shown.

The Display Area window is always opened, and something is always be displayed in it. It can be expanded to fill the whole screen of the system by pressing on the expand button in the title bar. Or it can be dragged to be made larger with the slide bar located between the Display Area and the Browser List (making the Browser List narrower). Or the Display Area window can be changed in size by changing the size of the product window.

The internal layout of the Display Area, the graphic behind its toolbar, and its background GIF file is defined by book attributes 612 for the displayed Media Element 202. For example if the media element is a recipe

then the cookbook template may define the ingredients to be listed on the top of the Display Window, and the directions below it. And the graphic behind the toolbar could be representative of cooking. Also there may be some different functionality attached to different templates. For example the cookbook template again could define a button to appear on the display area allow in the user to scale a recipe. In designing the different templates, the visual transition of the display area is as smooth and unobtrusive as possible. The rest of the interface does not change as the display area changes here.

If the item being displayed is text (e.g. an article or chapter) then there can also be embedded media inside of it. If an embedded media item is also represented as an Associated Media item 205 for that article or chapter then the user can click on the embedded media item to view the Associated Media item 205 of the same piece of media. The Associated Media item 205 is most likely a larger size than the embedded media item and it can also be copied or saved to a binder on its own, whereas an embedded media item cannot (it is part of the text). Most embedded media items also have an Associated Media item entry as well.

The layout of the Display Window includes the Book Title Bar, A Toolbar, an Article/Media Title/History List and a Display Area for the articles and media.

Book Title Bar: The title of the book here is the book where the currently displayed article or media item comes from. There is an expand button on this title bar to allow the user to expand the Display Window to take up the whole area of the application. When it is expanded the Browser List goes away. When expanded to large size a contract button replaces the space of the previous expand button, allowing the user to view the Browser List again and reduce the size of the Display

Window.

Toolbar: When the user rolls the cursor over one of the toolbar icons then it appears as a button.

The user has the option of viewing the toolbar with or without the text below the icons. This change can be made in the User Options dialog box.

There is also text displayed when the user rolls over an icon giving a more descriptive explanation of what the icon stands for.

Previous and Next in Book: When the previous and next buttons are pressed then the previous and next items in the current book is displayed in the Display Area. These items would include any item in the tree (e.g. book cover, chapters, articles and associated media).

The rollover text reads "Previous Item in Book" and "Next Item in Book".

If the user is viewing the last item of a book and then presses on the Next button the first item for the next book in the book browser list is displayed. When the user is viewing the first item of the first book in the book browser list then the previous button is disabled. When the user is viewing the last item of the last book in the book browser list then the next button is disabled.

Associated Media 205: When the user presses on the Media button a drop down (scrolling if needed) list of Associated Media 205 appears. Next to each piece of media is an icon telling which type of media the item is.

The user can then choose a media item in this list to view in the Display Area. After viewing a media item the user can go back to an article either by choosing the article from the same drop down list where the media was chosen from, or by clicking on the "Go to Article" hyperlink text displayed in the Display Area.

There are a few ways by which the user can

choose to view another media item in the current book. The user can choose another media item from the same drop down list. The user can choose a media item in the tree. Or if relevant the user can click on the previous and next in book buttons if there are other associated media items attached to the chosen article.

A media item is usually text and its associated media is usually one of the types of multimedia. But in some cases the media item could be a type of multimedia, such as with an atlas where the main media items could be maps and their associated media items could be text descriptions of the maps.

Related Information:

With the related information function the user can get a list of any articles that are related to the current media element or associated media element. The system of the present invention executes this function by conducting a query using the keywords from the displayed media element. The query is executing using the two highest weighted keywords from the displayed media element joined by an OR. The results of the search is displayed in the Search Browser List with the keyword radio button selected.

Context (Synchronize):

If the user has browsed in the Display Area window, such as by jumping to hot links, then the Browser List does not show where the currently displayed article or media item is located. If the user would like to have the Browser List display the location of the item in the Display Window then the Context button can be pressed.

Add to Binder: When the Add to Binder button is pressed the media element or associated media element displayed in the display window is added to the current Binder.

Print: The user is preferably able to print the contents of the Display Area. Only text, pictures and

possibly individual video frames typically have this feature. Optionally, only a selected portion of a text article is printed. Printing can also be done through the menu bar (File-Print).

Article(Media) Title and History Function: This function comprises a combo box and two arrow buttons. The article title is preferably displayed in the combo box. The user typically is able to click on the arrow of the combo box and choose to display any of the previous items viewed, which acts as a History list. The number of items in this list can be altered as a user option. There is a maximum number for this option. The user is able to click on the back and forward buttons to the left of the combo box, which respectively run through the items in the history list. When the user is viewing the first item in the history list then the back button is disabled, and when the user is viewing the last item in the history list the forward button is disabled.

The user is also able to type into the type area of the combo box and conduct a query by pressing on the return bar on the keyboard. A URL can also be typed or pasted into here bringing up a Web page.

Display Area: The item displayed in this area can be a book cover, chapter, article, media or associated media item. The background GIF file behind the text is determined by the book template chosen.

Where fitting, the top of the display area has an outline of articles (and/or media items) that appear in the next level of the tree under the displayed item. The items in this outline are preferably all hotlinks, which the user can click on to view the items in the display window. This is especially useful for listing the items in a chapter.

If appropriate the item in the display area can contain other hotlinks (text) or hotspots (pictures) which links to other media elements within the same book.

Text hotlinks are displayed in a different color, and the cursor changes when it is rolled over them. When the cursor is rolled over a graphic hotspot then it changes as well.

The user is able to copy the contents of this to the clipboard. Only text, pictures and possibly individual video frames have this feature. Copying is done through the Edit menu on the clipboard, or with the copy shortcut key.

Optionally, only a selected portion of a text article is copied.

Optional Next/Previous in Browser List Feature: The user is able to open up the next or previous media item in the Browser List without having to click on that item in the Browser List. The main advantage of these functions is when the user has expanded the media window to full screen, and the Browser List is not in view.

When this button is used the next item in the tree is displayed, going through the hierarchy, even if the tree itself is not opened in the Browser List. When the user is viewing the first or last items in the Browser List, then the respective previous and next buttons are disabled.

Double Clicking on a Word: Double clicking on a word in the display area window brings up a query box that allows the user to execute a query based on the word he has double clicked on. Alternatively the appropriate entry in the dictionary is displayed.

Status Bar: In the Research Center the status bar contains some "quick functions", and other content relevant information. The current functions in the Status Bar are the "Library" button, the "Books" button, standard information and the "Binder" status.

Library Button: This is a quick way to jump to the Library. The user is able to decide in user options whether this button displays the standard library dialog

box or the graphical library. The user is also able to get to either the standard library dialog box or the graphical library from the View menu above.

Books (on the Research Desk):

The rollover text on this button says "Books on the Research Desk".

This is a pop-up box listing all of the books in the library in alphabetical order. Next to each book there is a check box, and all of the books checked on are the ones presently in the Browser List (Research Desk). Here the user can quickly turn additional books on, or turn books off as desired, and this is be reflected in the Browser List.

After making changes with the Book box here the user is optionally able to save the current set of books in the Browser List as a new shelf.

Standard Status Information: The status bar also displays standard status bar information.

Binder Status: This area is a quick way for the user to see which binder is the currently selected binder.

An option discussed was having this area have a drop down list of all of the previously created binders, allowing the user to quickly switch between binders. This would allow the user to add information to whichever binder he desires from anywhere without having to go into the binder tab to choose the currently selected binder.

Shelf List: This is typically a pop-up combo box, which reflects the types of books that currently appear in the Browser List.

The choices in this drop-down list are the names of all of the shelves in the library, allowing the user to quickly jump to work with a different set of books. When a shelf is chosen all of its books appear in the Browser List by themselves.

If a custom combination of books has been

chosen to be displayed in the Browser List, as opposed to the books in just one bookshelf, then the word "custom" appears in the top selection of the Shelf combo-box.

When the user has first chosen to work with one shelf with the shelf list on the status bar, and then books are added or removed in this book list, the shelf itself is not permanently changed. The "Research Desk" section in the library would reflect the change, and the word custom would then appear in the quick Shelf list on the status bar. In order to permanently change the books in a shelf the user typically goes to the Library.

Stop Button: There is typically a stop button on the status bar, which allows the user to stop any action that has been started, such as a search.

Menu Bar: On the top of the screen there is a standard type menu bar, which appears for all views. The items in this menu bar changes to reflect the view that the user is presently in.

If a media item has the focus then the "Article Full Screen" and "Article in Window" menu items are replaced with "Media Full Screen" and "Media in Window".

If a media item has the focus then the "Article" menu item is called "Media" instead.

Figs. 61 - 62, taken together, form a simplified flowchart illustration of an example of a work-session using the system of the present invention.

Use the following commercially available components to compile Versabook.exe:

* "Crusher!". Version 3.2.
DC Micro Development
P.O.Box 54588
Lexington,
KY 40555
USA

Phone: 606-245-4175
Fax: 606-245-9305
http://www.dcmicro.com

* CodeBase 6.3
Sequiter Software, Inc.
P.O. Box 783
Greenland, NH, USA
03840
Phone: (403) 437-2410
Fax: (403) 436-2999
E-mail: info@sequiter.com
* Verity Search '97 Software Developers Toolkit Version 2.2.3
Verity, Inc.
894 Ross Drive
Sunnyvale, CA 94089
U.S.A.
Phone: (408) 541-1500
Fax: (408) 541-1600
www.verity.com

* LeadTools Win32 Pro V 8.0
Lead Technologies, Inc.
900 Baxter St.
Charlotte, NC 28204
USA
Phone: 704-332-55332
Fax: 704-372-8161
http://www.leadtools.com

* Ereg, Version 2.02
Husdawg Communications, Inc.
1660 S. Amphlett Bl, Ste. 306
San Mateo, CA 94402
USA

Phone: (650) 655-2522
Fax: (650) 655-2521
jhussey@husdawg.com

* SftTabs, version 2.12
Softel vdm
11 Michigan Ave.,
Wharton, NJ 07885
USA
Phone: (201) 366-9618
Fax: (201) 366-3984
www.softelvdm.com

* Kenn Nesbitt's ShareLock(TM)
Nesbitt Software Corporation

* Cgrm_en.dll - Text To Speech dll

Perform the following steps:

1. Type in the contents of each file.
2. Place the files in the appropriate directories as per the file list under the base directory D:\Versabook
3. Place the release libs for each 3rd party product in the D:\Versabook\release directory
4. Install Microsoft Developer Studio with Visual C++ Version 5.0 (Enterprise Edition)
5. Select Open Workspace under the File menu.
6. Change the Files of Type Combo Box to Projects (*.dsp)
7. Select D:\Versabook\Gameslib\Gameslib.dsp and press Open.
8. Open the Workspace window.
9. Go to the File tab in the Workspace window.
10. Right click on GamesLib Files and select Set as Active Project
11. Select Set Active Configuration under the Build menu
12. Select GamesLib - Win32 Release as the active config-

uration.
13. Select Build in the Build menu to compile the games-lib DLL
14. Select Open Workspace under the File menu.
15. Select D:\Versabook\build\versabook.dsw and press Open.
16. Open the Workspace window.
17. Go to the File tab in the Workspace window.
18. Right click on GUI Files and select Set as Active Project
19. Select Set Active Configuration under the Build menu
20. Select GUI - Win32 Release as the active configuration.
21. Select Build in the Build menu to compile the digital book.
22. Install InstallShield version 5.1 Professional Edition on your computer.
23. Create a folder Versabook_Install on D drive and create the Versabook InstallShield files in their appropriate directories.
24. Run InstallShield by clicking tart", "Programs", "InstallShield 5.1 Professional Edition".
25. Click "File","Open" and "D:\Versabook_Install\Versabook 1.20.ipr" to open the project.
26. (7)Choose the media tab (the disks icon on the tab).
27. Choose Media Build Wizard.
28. Choose Default and click Next.
29. Keep choosing Next, and then choose Finish.
30. Using Explorer, open the folder D:\Versabook_Install\Versabook\Media\Default\Disk Images\disk 1.
31. Delete the file Setup.ini.
32. Copy all the remaining files onto \\NRServer\Versabook\Setup.

The following components are installed:

* DirectX.exe - Microsoft DirectX 5 distribution

* DXMWrap.exe - Microsoft DirectX 5 distribution
* Msie302.exe - Microsoft Internet Explorer 3.02 Distribution for Win95
* Msie302mnt.exe - Microsoft Internet Explorer 3.02 Distribution for NT
* Amovie.exe - Microsoft Active Movie distribution
* Spchapi.exe - Text To Speech
* SWFlash.ocx - ShockWave Flash, Macromedia
* Wetstd32.dll

The Main Menu displays the different options available in the F&W Encyclopedia. To enter, click on one of the following:

* Book View: Opens a research center, with the Book tab selected. All the books available for searching on the user's Research Desk are listed.

* Search: Opens the Research Center with the Search tab selected. Here the user can choose the search options s/he needs to conduct his or her research.

* Media Gallery: Opens the Research Center with the Media tab selected. A Media Gallery Table of Contents is displayed in the View Pane. To view a list of all media items in a specific media type, click on the appropriate media icon.

* Binder: Opens the Research Center with the Binder tab selected. Here the user can collect and organize all his or her research in file folders called Binders (collections of articles and websites for specific projects) for future reference.

* Library: Opens the user's digital Library, where the user can add publications to his or her collection and organize his or her books on Shelves for easy access.

* Digital Bookstore: Transports the user to an online Bookstore, where the user can purchase and download books directly to his or her digital Library.

* F&W Knowledge Center: Takes the user directly to the website of the Funk & Wagnalls Knowledge Center.

* Guided Tour: Begins the user's guided tour of the incredible features of the Funk & Wagnalls Unabridged Encyclopedia.

The Research Center

The Research Center is the main Funk & Wagnalls window and is where the user searches, views, organizes and saves articles and media.

The window typically comprises three main components:

* The Navigation Bar, on the left-hand side -- here the user can click on icons to quickly get to one of many locations in the Encyclopedia.

* The Control Pane, in the center, where the user can view book on the user's Research Desk, run searches, select media items, and manage Binders.

* The View Pane, on the right-hand side, where the selected item is viewed.

Tabs and buttons

Tabs appear on the Tool Bar above the Control Pane of the Funk & Wagnalls Research Center. They allow the user to

display a list of all the books on the user's Research Desk, display the different search capabilities, check out the Media Gallery, and manage the user's Binders.

Buttons appear on the Tool Bar in the View Pane of the Research Center. They allow the user to view previous and next articles in the book the user is researching, display associated media, show the user the book in which the article appears, add an article to a Binder, and print a selected article.

Search options

A research system lets the user conduct searches for articles and media items with either of the following techniques:

Simple search
Here the user is presented with three methods of searching by text:

* Searching titles only - Searches only the titles of articles or media items.
* Searching full text - Searches the body of the articles and captions under media items.
* Natural language query - Searches using a phrase expressed in plain English, for example: city in Australia.

The user may carry out other searches by using other options, termed herein "advanced" options, which may for example provide the following options:

* Find Only Media
* Conduct a Keyword search
* Conduct a Topic search

* Conduct a Related Article search

The user can then sort his or her findings alphabetically or by score (a reflection of how closely the article is related to his or her search request).

Filing system

The user can organize and save all his or her found articles, media items, and even Internet URLs (addresses) in file folders called Binders, for future reference. Binders may be created and reorganized, and their contents printed.

Funk & Wagnalls Multimedia Gallery

The Funk & Wagnalls Unabridged Encyclopedia is packed with thousands of media, which can be selected for viewing through the Media Gallery Table of Contents.

* Animations, Photos and Videos
* Maps and Flags
* Music, Sounds and Speeches

The Digital Library

A Library Builder allows the user to create his or her own personalized digital Library.

* Automatically update articles and media in his or her Funk & Wagnalls Unabridged Encyclopedia.
* Seamlessly add and integrate entire books from online Bookstores, other Internet sites, and publishers' CDs to his or her digital Library.
* Organize his or her new books on library Shelves for instant reference.

* Simultaneously search his or her entire library for the information s/he needs.

Updating books in user's digital Library: Every updated article or new book in the user's digital Library is incorporated, sorted, assigned keywords and cataloged for easy searching at a later date. The user can check for updates on a specific book or on all the books in his or her digital Library

Purchasing and adding books to user's digital Library: The digital book system allows the user to purchase and download new books to his or her digital Library from two sources:

* Internet bookstores
* CD-ROMs and DVD-ROMs

The user's new book is typically seamlessly integrated into his or her digital Library and placed on his or her Research Desk for immediate use.

The digital Librarian

The digital librarian, also termed herein the "bookworm," sits in the library, waiting to assist the user. The librarian is operative to explain the various features of the Graphical Library or help the user hook up with an Internet bookstore or get back to the Research Center. The user can also have the librarian read him or her a book.

The software embodiment of Appendix A may be provided with a CD-ROM encyclopedia with a completely-stocked, fully-searchable, home digital library. Thousands of books can be downloaded from the online digital book store, then seamlessly integrated by a library builder into the user's electronic library.

To compile a Book or to compile media, using the software embodiment of Appendix A, the following steps may be performed:

Use a PC Compatible Pentium Computer running Windows NT 4.0 with the following:

* Three button mouse
* Keyboard
* Colour 17" Monitor
* 3 Gigabyte Hard Disk Partitioned into C and D drives with at least 2 Gigabytes on the D Drive
* CDROM
* 64 Megabytes of RAM

Use the following commercially available products to compile the Versabook.exe file of Appendix A:

* "Crusher!". Version 3.2.
DC Micro Development
P.O.Box 54588
Lexington,
KY 40555
USA
Phone: 606-245-4175
Fax: 606-245-9305
http://www.dcmicro.com
* CodeBase 6.3
Sequiter Software, Inc.
P.O. Box 783
Greenland, NH, USA
03840
Phone: (403) 437-2410
Fax: (403) 436-2999
E-mail: info@sequiter.com
* Verity Search '97 Software Developers Toolkit Version 2.2.3
Verity, Inc.

894 Ross Drive
Sunnyvale, CA 94089
U.S.A.
Phone: (408) 541-1500
Fax: (408) 541-1600
www.verity.com
* LeadTools Win32 Pro V 8.0
Lead Technologies, Inc.
900 Baxter St.
Charlotte, NC 28204
USA
Phone: 704-332-55332
Fax: 704-372-8161
http://www.leadtools.com

Perform the following steps:

1. Type in the contents of each file.
2. Place the files in the appropriate directories as per the file list under the base directory D:\Versabook
3. Place the release libs for each 3rd party product in the D:\Versabook\release directory
4. Install Microsoft Developer Studio with Visual C++ Version 5.0 (Enterprise Edition)
5. Select Open Workspace under the File menu.
6. Change the Files of Type Combo Box to Projects (*.dsp)
7. Select "D:\Versabook\BookCompiler\ BC GUI.dsp" and press Open.
8. Open the Workspace window.
9. Go to the File tab in the Workspace window.
10. Right click on BC GUI Files and select Set as Active Project
11. Select Set Active Configuration under the Build menu
12. Select BC GUI - Win32 Release as the active configuration.
13. Select Build in the Build menu to compile the BC

GUI.exe

14. Install InstallShield version 5.1 Professional Edition on your computer.

15. Create a folder Versabook_Install on D drive and create the Versabook InstallShield files in their appropriate directories.

16. Run InstallShield by clicking "Start", "Programs", "InstallShield 5.1 Professional Edition".

17. Click "File","Open" and "D:\Versabook_Install\BookCompiler.ipr" to open the project.

18. Choose the media tab (the disks icon on the tab).

19. Choose Media Build Wizard.

20. Choose Default and click Next.

21. Keep choosing Next, and then choose Finish.

22. Using Explorer, open the folder D:\Versabook_Install\Media\Default\Disk Images\disk 1.

23. Run the Setup.exe to install the BookCompiler on your computer

24. The text of the book to be compiled is assumed to exist in the form of one or more electronic Word For Windows documents. Typically, a very lengthy book appears as more than one electronic documents. For example, a book whose text is 100 megabytes long may be represented by 50 2 megabyte documents.

Each such document is converted into a Master Document. This is done by converting each Word For Windows document into RTF Winhelp format except that article IDs are stored after the titles, with a style tag called Article ID, rather than having the article ID appearing in a footnote before the article's title as in RTF Winhelp format.

Generate a list of the master document or master documents which represent the book to be compiled. This may be done by hand or by using a utility which opens up a directory and creates a list of user-selected files. This list is stored in a file called

"filelist.doc". Each master document name in "filelist.doc" should be separated from the former master document name only by a line feed. There is thus exactly one master document name per line.

As described above, VersaBookMakeMasterHTML unit 907 converts Master documents 906 into Master HTML Documents 908. To perform this conversion, using Microsoft Word 97, type in code entitled "VersabookMasterHtml" in Appendix A, into a VBA (Visual Basic Application) and name the VBA "VersaBookMakeMasterHTML".

25. Run the "VersaBookMakeMasterHTML" on the "filelist.doc" file. As described above, filelist.doc is a list of the master documents characterizing the book being compiled. This step is performed by pressing the buttons [tools][macro](choose "VersaBookMakeMasterHTML")[run].

26. Create FrmVersabook0.frm by typing up the document "Visual Basic Form for Tree Processor" which is in Appendix A and saving it as ASCII with the name "FrmVersabook0.frm"

27. Create VersabookCompilerQ2.vbp by typing up the document "VersabookCompilerQ2.vbp" which is in Appendix A and saving it as ASCII with the name "VersabookCompilerQ2.vbp"

28. Visual Basic 5.0 may be used to run Versabook-CompilerQ2.vbp.

29. Book Tree Processor 909 converts Master HTML Documents 908 to Outline Tree 910 and Mini HTML Documents 911 using article information database 903 for keywords and subjects and using media from conventional media archives such as Archive Photo in New York, ASAP in Tel Aviv, Israel, Bettman Photo in New York.

30. Run the BookCompiler generated in steps 1 - 23.

In the above description of the illustrated embodiment, the term "media" may include text. The media database 170 of Fig. 1 may include text although it most

typically stores non-text information such as sound and pictures. "Media queries" could search for all types of media items including text. The term "media data objects" refers to both text media items and non-text media items.

Reference is now made to Fig. 63 which is a flowchart illustration of a preferred method of operation for a publisher's tool constructed and operative in accordance with a preferred embodiment of the present invention. The publisher's tool, also termed herein the "publisher's book digitizing system", is operative to facilitate digitization of a book by a publisher.

First, preferred steps in the creation of a digital book are described.

1. Conversion of Source Documents into Master Documents

In this process all of the source documents of the book are converted into the Master Document format. The source documents can start out in any format. The Master Document format will be HTML and in the future XML. This step typically includes conversion of documents to HTML and organization of HTML documents.

1.1. Conversion of Documents to HTML

The first step in this process is to convert all of the source documents into HTML. There are a variety of ways for the publisher to perform this step:

1. The publisher can convert the documents to HTML with a tool of his own. An example of this would be to convert a Word document into HTML by doing "Save as HTML" in Word for Windows.

2. The publisher can have a Service Center perform this step.

3. It is an aim to provide a package of utilities with the publisher's tool, which the publisher could use to perform this conversion process. There would be different utilities for this conversion process for the

publisher to use depending on the format of the source documents.

A goal is to provide utilities for this conversion process from all sorts of formats. For version 1 utilities may be available to convert from ASCII to HTML and from SGML to HTML. An aim is to provide conversion filters also for other popular formats such as Quark, Word and Ventura.

What actually happens in this conversion process to the Master Document format is that a certain structure is created for the documents. This structure includes making the text generally readable with substantially no unnecessary spaces. It also includes creating a logical hierarchical structure for the book, including headings. There will be a maximum of 6 levels of headings that can be used in creating this structure, in fitting with HTML.

1.2. Organization of the HTML Documents: After all of the source documents are in HTML format the official Publisher's Tool begins. There will be a wizard to start the digital book creation process. The following steps will take place in this Wizard-Organization process:

1. The publisher will be asked to put all of the HTML files in one directory and to specify which directory it is and where it is located.

2. The publisher will be asked to put all of his own media files in one directory and to specify which directory it is and where it is located.

3. The publisher will be asked to specify the order of all of the HTML documents in the book.

4. The publisher will be asked to choose a general template for the book

5. A verification process will take place confirming that all of the links match up correctly.

At the end of this process the source documents

are in the Master Document format. The individual HTML articles are not split up yet at this point, they are still in the same grouping as the Source Documents were in. For example if each source document were a chapter in the book then each Master Document would also be a chapter in the book.

While in the Master Document format certain processes can be performed on the documents. These processes include:

1. The publisher is able to change any of the structure of the book. Examples of structural changes could be: Changing headings anywhere in the book, Moving articles, chapters, etc. around in the book, Merging articles within the book, Adding new articles to the book, Deleting articles from the book and Updating existing articles in the book.

After the structure has been changed the publisher can choose to view a tree of the book, which would display the order of the structure of the book and how it is broken up. This way the publisher can see if he likes the changes that he made before moving forward.

2. The publisher can perform a wide variety of editing processes here. These would include editing of text, changing the style of the text, cutting and pasting, and more.

3. The publisher can create hyperlinks within his book here using an automatic hyperlinking process.

Master Documents can be printed and they can be saved in various formats that the publisher may want for other uses.

The next step in the creation of a digital book is to convert all of the Master Documents into a certain database format where other processes can be performed on them. There is preferably another wizard to aid the publisher in performing this step. In this conversion process the book is divided into all of its sections

(chapters, articles) so they can be worked on individually. The hierarchical structure of each article is then verified to make sure that it makes sense and has no errors.

A publisher's own media may or may not be able to maintain its links to articles in this step.

While in the database format of the present invention, the system is able to choose each item in the tree structure of the book individually and perform the various processes on it. These items will include the book level, chapters, articles, and associated media items (as they are added to the project).

Depending on the publisher's needs, the steps that will be available to be implemented here can be done in an automated fashion, a semi-automated fashion or a totally manual fashion. There will be wizards and various browsing methods available for each step if it is fitting to aid the publisher in performing these steps.

The following steps can be performed while in the database format:

1. Adding Media: The publisher can add as many media items, associated and/or embedded, to a piece of the book as desired.

Associated media items are items that are attached to a piece of the book, but they also each have their own properties and can be viewed on their own. Associated media items can be added from the Media Database 170 or from the Publisher's own collection of media. A wizard will be available to help the publisher to choose media items from the Media Database 170 only. After an associated media item is assigned to an article it will appear in the tree of the book under the article. The associated media item will then have the ability to be assigned categories, keywords, and any of the query data particular to the queries associated with the books.

Properties of the associated media item such as title and/or caption are preferably editable by a user.

Embedded media is media that is located within the article itself and it does not have its own properties as associated media has. Embedded media does not appear in the book's tree structure. The publisher can choose to embed this type of media into any location within an article (or chapter, etc). Embedded media can be added from the Media Database 170 or from the Publisher's own collection of media. A wizard will be available to help the publisher to choose media items from the Media Database 170 only.

2. Attaching Categories: The publisher is able to choose an unlimited number of categories and sub-categories for each item in the book's tree structure. There will be a fixed list of categories and sub-categories to choose from, and new ones cannot be added. The list of categories and subcategories available will be determined by the template, which was chosen for the book.

A parent and child item in the tree cannot have the same category/sub-category combination. Typically, the Publisher's Tool can check this. Associated media items that have been added to the book can also be assigned categories and sub-categories.

3. Attaching Keywords: The publisher will be able to add an unlimited number of keywords to each item in the book's structure. Parent and child items in the tree cannot have the same keyword attached to them. Typically, the Publisher's Tool monitors their activities.

Associated media items that have been added to the book can also be assigned keywords. Optionally, keywords can be automatically added.

4. Conversion from Database Format Back into Master Document Format: The publisher may want to convert

articles back to the Master Document format, e.g. to change the book structure or to save the information in a different format for other uses.

In this process the publisher can convert one article or choose selected articles to convert back to the Master Document format. Alternatively, the whole database of articles can be converted back if any are to be done.

If an article is converted back to a Master document then in order to be incorporated into the media database 170 it is typically converted back to the Database format.

Final Steps in Creating a digital book - Digital book Compilation Process: After all of the editing and enriching has been performed on all of the items in the book the publisher can take all of the items in the Database format and convert them into a digital book.

Accounting and Packaging: Before the final digital book compilation process takes place an account is generated as to how many and which pieces of media were used from the Media Database 170.

A message will be sent to the system Server that a new invoice has come in. The invoice will contain a list of all of the media used for the book and the price of each piece of media. If this is a second version of the book then optionally, only the new added media is charged for.

Before compiling a final digital book the publisher is asked if this version is a draft or the final book.

The system ensures that the publisher doesn't use a draft version for the real version: one implementation is to have the words "Draft Version" written on every HTML page of the book.

Optionally, the publisher is charged for the media only when the final digital book is compiled and

not for the media in a draft version.

Any suitable process for assigning version numbers may be employed.

Final digital book- Three Outcome Options

The publisher can choose to create any or all of these options.

1. A Physical DVD/CD - a stand-alone digital book

2. Web Pages - an HTML document

This is all of the information in an HTML format that the publisher can use to create a Web site.

3. A Downloadable Netbook

This will be a book that will be compatible for use with the library research engine 150, also termed herein the system's "consumer Viewer". This can be put on the Internet.

EXAMPLE

An example of the use of the tables of Fig. 6 in order to research a book entitled "Treating Asthma, Allergies, and Food Sensitivities" is now described with reference.

An example of Attributes table 427 filled with data which represents attributes of the book entitled "Treating asthma...", is the following:

Sample Attributes Table

Name	Value
Book Version #	1.10 (Build 7)
Text Date	04/28/1998
Compile Date	04/28/1998
Dewey Decimal	
LOC Number	
Merging Level	3
How Often To Check	0/0/0
Copyright HLink Txt	1997 by The Philip Lief Group
Default Bookshelf	Health & Medicine
Def Shelf Internal	Health & Medicine
Copyright	1997 by The Philip Lief Group
Author	Alan Pressman and Herbert D. Goodman
Publisher	Berkley
Background	ÿØÿà
Copyrights Page #	999999999
Overview Page #	999999998
Caption Backgrnd	"#5151C3"
Caption Color	"#FEF5D8"
Update Version #	0
<H1> attributes	
<H2> attributes	
<H3> attributes	
<H4> attributes	
<H5> attributes	
<H6> attributes	
Before <H1>	<TABLE WIDTH=100%><TR><TD><FONT COLOR="#4747B9"><B>
After <H1>	</B></FONT></TD></TR> <TR><TD> <IMG SRC= **gif2** width=100% height=4> </TD></TR> </TABLE><BR CLEAR=ALL>
End <H1>	
Before <H2-6>	<BR CLEAR=ALL><FONT COLOR="#5151C3"><B>
After <H2-6>	</B></FONT><blockquote>
End <H2-6>	</blockquote>
Body attributes	
Table attributes	BGCOLOR="#FEFBED" BORDERCOLORDARK="#0000A1" BORDERCOLORLIGHT="#AACCFF"
Border	"0"
Additional Gif File	GIF89a
Cell Spacing	"2"

An example of a Bookcase table 473 filled with data which represents an individual user's bookcase. now follows. Each record in the following Bookcase table typically represents a single bookshelf:

Sample Bookcase Table

ID	Parent	ChildNum	Num Child	DO	BookID	De	Name
0000000001	0000000000	0000000001	0000000003	03	0538976288	20	
0000000002	0000000001	0000000002	0000000000	03	0538976288	20	Librarian
0000000003	0000000001	0000000003	0000000000	03	0538976288	20	Recycle Bin
0000000005	0000000001	0000000001	0000000002	03	0538976288	20	Encyclopedias & Dictionaries
0000000004	0000000005	0000000002	0000000000	01	0000000001	20	Funk & Wagnalls Encyclopedia
0000000006	0000000005	0000000001	0000000000	01	0000000002	20	Concise Dictionary of Great 20th Century Biographies

An example of a Briefcase table 449 filled with data which represents the individual user's briefcase including a single binder, is as follows. Each record in a briefcase typically corresponds to a single binder:

Sample Briefcase Table

ID	ParentID	ChildNum	NumOfChil	DO	BookID	MOID	URL	Name
0000000001	0000000000	0000000001	0000000000	02	0538976288	0538976288		

An example of a query ID result table 440 is as follows:

ID	Count
9	0
8	1
6	43

An example of a viewdata table 430, filled with data which represents viewable data in the above-referenced book entitled "Treating asthma...", is as follows:

Sample Viewdata Table

ID	Format	Location	Format2	Location2
0000000001	FLASH	FILE	CORUP	UNDEF
0001000000	HTML	TABLE	CORUP	UNDEF
0001000001	CORUP	UNDEF	CORUP	UNDEF
0001001001	HTML	TABLE	CORUP	UNDEF
0001000002	HTML	TABLE	CORUP	UNDEF
0001000003	HTML	TABLE	CORUP	UNDEF
0001000004	HTML	TABLE	CORUP	UNDEF
0001000005	HTML	TABLE	CORUP	UNDEF
0001000006	HTML	TABLE	CORUP	UNDEF
0001000007	HTML	TABLE	CORUP	UNDEF
0001000008	HTML	TABLE	CORUP	UNDEF
0001000009	HTML	TABLE	CORUP	UNDEF
0001000010	HTML	TABLE	CORUP	UNDEF
0001000011	HTML	TABLE	CORUP	UNDEF
0001000012	HTML	TABLE	CORUP	UNDEF
0001000014	HTML	TABLE	CORUP	UNDEF
0900019789	MPG1	MEDDB	CORUP	UNDEF
0001000015	HTML	TABLE	CORUP	UNDEF
0900019499	JPG	MEDDB	CORUP	UNDEF
0001000016	HTML	TABLE	CORUP	UNDEF
0900019500	JPG	MEDDB	CORUP	UNDEF
0900019502	JPG	MEDDB	CORUP	UNDEF
0001000122	HTML	TABLE	CORUP	UNDEF
0001000123	HTML	TABLE	CORUP	UNDEF
0001000124	HTML	TABLE	CORUP	UNDEF
0001000125	HTML	TABLE	CORUP	UNDEF
0001000126	HTML	TABLE	CORUP	UNDEF
0001000127	HTML	TABLE	CORUP	UNDEF
0001000128	HTML	TABLE	CORUP	UNDEF
0001000129	HTML	TABLE	CORUP	UNDEF
0001000130	HTML	TABLE	CORUP	UNDEF
0001100017	HTML	TABLE	CORUP	UNDEF
0001000017	HTML	TABLE	CORUP	UNDEF
0900019634	JPG	MEDDB	CORUP	UNDEF
0001000131	HTML	TABLE	CORUP	UNDEF
0001000132	HTML	TABLE	CORUP	UNDEF
0001000133	HTML	TABLE	CORUP	UNDEF
0001000134	HTML	TABLE	CORUP	UNDEF
0001000135	HTML	TABLE	CORUP	UNDEF
0001000136	HTML	TABLE	CORUP	UNDEF
0001000137	HTML	TABLE	CORUP	UNDEF
0001000018	HTML	TABLE	CORUP	UNDEF
0001000019	HTML	TABLE	CORUP	UNDEF
0900019811	JPG	MEDDB	CORUP	UNDEF
0001000138	HTML	TABLE	CORUP	UNDEF
0001000139	HTML	TABLE	CORUP	UNDEF
0001000140	HTML	TABLE	CORUP	UNDEF
0001000141	HTML	TABLE	CORUP	UNDEF
0001100020	HTML	TABLE	CORUP	UNDEF
0001000020	HTML	TABLE	CORUP	UNDEF
0900019507	JPG	MEDDB	CORUP	UNDEF
0900019517	JPG	MEDDB	CORUP	UNDEF

0001000021	HTML	TABLE	CORUP	UNDEF
0900019520	JPG	MEDDB	CORUP	UNDEF
0900019521	JPG	MEDDB	CORUP	UNDEF
0900019522	JPG	MEDDB	CORUP	UNDEF
0001000142	HTML	TABLE	CORUP	UNDEF
0001000143	HTML	TABLE	CORUP	UNDEF
0001000144	HTML	TABLE	CORUP	UNDEF
0001000145	HTML	TABLE	CORUP	UNDEF
0001000146	HTML	TABLE	CORUP	UNDEF
0001000147	HTML	TABLE	CORUP	UNDEF
0001000148	HTML	TABLE	CORUP	UNDEF
0001000149	HTML	TABLE	CORUP	UNDEF
0001000022	HTML	TABLE	CORUP	UNDEF
0001000023	HTML	TABLE	CORUP	UNDEF
0001000024	HTML	TABLE	CORUP	UNDEF
0001000025	HTML	TABLE	CORUP	UNDEF
0900019525	JPG	MEDDB	CORUP	UNDEF
0001000026	HTML	TABLE	CORUP	UNDEF
0001000238	HTML	TABLE	CORUP	UNDEF
0001000150	HTML	TABLE	CORUP	UNDEF
0001000151	HTML	TABLE	CORUP	UNDEF
0001000027	HTML	TABLE	CORUP	UNDEF
0001100028	HTML	TABLE	CORUP	UNDEF
0001000028	HTML	TABLE	CORUP	UNDEF
0900019528	JPG	MEDDB	CORUP	UNDEF
0900019529	JPG	MEDDB	CORUP	UNDEF
0900019530	JPG	MEDDB	CORUP	UNDEF
0001000029	HTML	TABLE	CORUP	UNDEF
0001000030	HTML	TABLE	CORUP	UNDEF
0900019531	JPG	MEDDB	CORUP	UNDEF
0900019532	JPG	MEDDB	CORUP	UNDEF
0900019533	JPG	MEDDB	CORUP	UNDEF
0001000152	HTML	TABLE	CORUP	UNDEF
0001000031	HTML	TABLE	CORUP	UNDEF
0001000032	HTML	TABLE	CORUP	UNDEF
0001000033	HTML	TABLE	CORUP	UNDEF
0001000034	HTML	TABLE	CORUP	UNDEF
0001000035	HTML	TABLE	CORUP	UNDEF
0900019534	JPG	MEDDB	CORUP	UNDEF
0900019535	JPG	MEDDB	CORUP	UNDEF
0001000036	HTML	TABLE	CORUP	UNDEF
0900019536	JPG	MEDDB	CORUP	UNDEF
0001000037	HTML	TABLE	CORUP	UNDEF
0001000038	HTML	TABLE	CORUP	UNDEF
0900019537	JPG	MEDDB	CORUP	UNDEF
0900019538	JPG	MEDDB	CORUP	UNDEF
0001000039	HTML	TABLE	CORUP	UNDEF
0001100040	HTML	TABLE	CORUP	UNDEF
0001000040	HTML	TABLE	CORUP	UNDEF
0001000041	HTML	TABLE	CORUP	UNDEF
0001000042	HTML	TABLE	CORUP	UNDEF
0001000153	HTML	TABLE	CORUP	UNDEF
0001000154	HTML	TABLE	CORUP	UNDEF
0001000155	HTML	TABLE	CORUP	UNDEF
0001000156	HTML	TABLE	CORUP	UNDEF
0001000157	HTML	TABLE	CORUP	UNDEF
0001000158	HTML	TABLE	CORUP	UNDEF

0001000043	HTML	TABLE	CORUP	UNDEF
0001000044	HTML	TABLE	CORUP	UNDEF
0001000045	HTML	TABLE	CORUP	UNDEF
0001000047	HTML	TABLE	CORUP	UNDEF
0001100048	HTML	TABLE	CORUP	UNDEF
0001000048	HTML	TABLE	CORUP	UNDEF
0001000049	HTML	TABLE	CORUP	UNDEF
0900019539	JPG	MEDDB	CORUP	UNDEF
0001000050	HTML	TABLE	CORUP	UNDEF
0001100051	HTML	TABLE	CORUP	UNDEF
0001000051	HTML	TABLE	CORUP	UNDEF
0900019540	JPG	MEDDB	CORUP	UNDEF
0900019781	JPG	MEDDB	CORUP	UNDEF
0001100052	HTML	TABLE	CORUP	UNDEF
0001000052	HTML	TABLE	CORUP	UNDEF
0001000159	HTML	TABLE	CORUP	UNDEF
0001000160	HTML	TABLE	CORUP	UNDEF
0001000161	HTML	TABLE	CORUP	UNDEF
0001000162	HTML	TABLE	CORUP	UNDEF
0001000163	HTML	TABLE	CORUP	UNDEF
0001000053	HTML	TABLE	CORUP	UNDEF
0001000164	HTML	TABLE	CORUP	UNDEF
0001000165	HTML	TABLE	CORUP	UNDEF
0001000166	HTML	TABLE	CORUP	UNDEF
0001100054	HTML	TABLE	CORUP	UNDEF
0001000054	HTML	TABLE	CORUP	UNDEF
0900019542	JPG	MEDDB	CORUP	UNDEF
0001000055	HTML	TABLE	CORUP	UNDEF
0001000167	HTML	TABLE	CORUP	UNDEF
0001000168	HTML	TABLE	CORUP	UNDEF
0001000169	HTML	TABLE	CORUP	UNDEF
0001000170	HTML	TABLE	CORUP	UNDEF
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An example of a tree table 401 is as follows:

ID	Parent	ChildNum	Num Child	MO	Media	MediaDBID	DU	Lan	Vrsn	Name
0000000001	0000000000	0000000001	0000000013	MC	TEXT	0000000000	01	ENG	00000	Treating Asthma, Allergies, and Food Sensitivies
0001000000	0000000001	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	About this book
0001000001	0000000001	0000000002	0000000004	ME	TEXT	0000000000	01	ENG	00000	Introduction
0001001001	0001000001	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	ARE YOU HEALTHY?
0001000002	0001000001	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	TRADITIONAL MEDICINE: A BRIEF HISTORY
0001000003	0001000001	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	ALTERNATIVE MEDICINE: A BRIEF HISTORY
0001000004	0001000001	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	THE PHYSICIANS' GUIDES TO HEALING
0001000005	0001000001	0000000003	0000000004	ME	TEXT	0000000000	01	ENG	00000	Asthma, Allergies, and Food Sensitivities
0001000006	0001000005	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	ASTHMA
0001000007	0001000005	0000000002	0000000003	ME	TEXT	0000000000	01	ENG	00000	ALLERGIES
0001000008	0001000007	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Food Allergy
0001000009	0001000007	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Skin Allergy
0001000010	0001000007	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Allergic Rhinitis and Hay Fever
0001000011	0001000005	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	FOOD SENSITIVITIES
0001000012	0001000005	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	TREATMENTS FOR ASTHMA, ALLERGIES, AND FOOD SENSITIVITIES
0001000014	0000000001	0000000004	0000000005	ME	TEXT	0000000000	01	ENG	00000	Adult Asthma
0900019789	0001000014	0000000001	0000000000	AMI	VIDEO	0000127261	30	ENG	00000	Asthma
0001000015	0001000014	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	WHAT HAPPENS DURING AN ASTHMA ATTACK?
0900019499	0001000015	0000000001	0000000000	AMI	PHOTO	0000050291	30	ENG	00000	Asthma attack
0001000016	0001000015	0000000002	0000000011	ME	TEXT	0000000000	01	ENG	00000	Triggers of an Asthma Attack
0900019500	0001000016	0000000001	0000000000	AMI	PHOTO	0000001348	30	ENG	00000	Asthma Attack: Sinusitus
0001000122	0001000016	0000000002	0000000000	AMI	PHOTO	0000074372	30	ENG	00000	Asthma Attack: Aspirin
0001000123	0001000016	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Allergies
0001000124	0001000016	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Food Additives
0001000125	0001000016	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Exercise
0001000126	0001000016	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Viral Respiratory-Tract Infection
0001000127	0001000016	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sinusitis
0001000128	0001000016	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Stress and Emotion
0001000129	0001000016	0000000009	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sensitivity to Aspirin
0001000130	0001000016	0000000010	0000000000	ME	TEXT	0000000000	01	ENG	00000	Environmental Irritants
0001100017	0001000014	0000000011	0000000000	ME	TEXT	0000000000	01	ENG	00000	Occupational Factors
0001000017	0001100017	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0900019634	0001000017	0000000001	0000000000	AMI	PHOTO	0000057813	30	ENG	00000	Diagnosis
0001000131	0001000017	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Exercise challenge test
0001000132	0001000017	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Spirometry/Pulmonary Function Tests
0001000133	0001000017	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sputum Examination
0001000134	0001000017	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Methacholine/Histamine Challenge
0001000135	0001000017	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Exercise Challenge Tests
0001000136	0001000017	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Arterial Gas Tests
0001000137	0001000017	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sinus X Ray
0001000018	0001100017	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Skin Testing
0001000019	0001100017	0000000003	0000000005	ME	TEXT	0000000000	01	ENG	00000	Monitoring Your Asthma: The Peak Flow Meter
0900019811	0001000019	0000000001	0000000000	AMI	PHOTO	0000018266	30	ENG	00000	Preventative Measures
0001000138	0001000019	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Asthma: Inhaler
0001000139	0001000019	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Evironmental Changes
0001000140	0001000019	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Medication
										Immunotherapy (Allergy Injections)

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0001000141	0001000019	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sinus Care
0001100020	0001000014	0000000004	0000000008	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000020	0001100020	0000000001	0000000002	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutrition
0900019507	0001000020	0000000001	0000000000	AMI	PHOTO	0000013458	30	ENG	00000	Diet and Nutrition
0900019517	0001000020	0000000002	0000000000	AMI	PHOTO	0000071290	30	ENG	00000	Diet and Nutrition: Green tea
0001000021	0001100020	0000000002	0000000011	ME	TEXT	0000000000	01	ENG	00000	Herbal medicine
0900019520	0001000021	0000000001	0000000000	AMI	PHOTO	0000015357	30	ENG	00000	Herbal medicine: Sage
0900019521	0001000021	0000000002	0000000000	AMI	PHOTO	0000015537	30	ENG	00000	Herbal medicine: Eucalyptus
0900019522	0001000021	0000000003	0000000000	AMI	PHOTO	0000047011	30	ENG	00000	Herbal medicine: Ginseng
0001000142	0001000021	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Siberian Ginseng
0001000143	0001000021	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Mullein
0001000144	0001000021	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Fenugreek
0001000145	0001000021	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Catnip
0001000146	0001000021	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sage
0001000147	0001000021	0000000009	0000000000	ME	TEXT	0000000000	01	ENG	00000	Passion Flower
0001000148	0001000021	0000000010	0000000000	ME	TEXT	0000000000	01	ENG	00000	Eucalyptus
0001000149	0001000021	0000000011	0000000000	ME	TEXT	0000000000	01	ENG	00000	Angelica
0001000020	0001100020	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Acupuncture
0001000023	0001100020	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Psychotherapy
0001000024	0001100020	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Osteopathy
0001000025	0001100020	0000000006	0000000001	ME	TEXT	0000000000	01	ENG	00000	Massage
0900019525	0001000025	0000000001	0000000000	AMI	PHOTO	0000075398	30	ENG	00000	Massage
0001000026	0001100020	0000000007	0000000003	ME	TEXT	0000000000	01	ENG	00000	Homeopathy
0001000238	0001000026	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Yoga
0001000150	0001000026	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	The Mountain
0001000151	0001000026	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	The Complete Breath
0001000027	0001100020	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Chiropractic
0001000028	0001000014	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000028	0000000001	0000000005	0000000009	ME	TEXT	0000000000	01	ENG	00000	Juvenile Asthma
0900019528	0001000028	0000000001	0000000000	AMI	PHOTO	0000058989	30	ENG	00000	Juvenile Asthma
0900019529	0001000028	0000000002	0000000000	AMI	PHOTO	0000069548	30	ENG	00000	Juvenile Asthma
0900019530	0001000028	0000000003	0000000000	AMI	PHOTO	0000074454	30	ENG	00000	Juvenile Asthma
0001000029	0001000028	0000000004	0000000008	ME	TEXT	0000000000	01	ENG	00000	WHAT TRIGGERS AN ASTHMA ATTACK?
0001000030	0001000029	0000000001	0000000004	ME	TEXT	0000000000	01	ENG	00000	Allergies
0900019531	0001000030	0000000001	0000000000	AMI	PHOTO	0000008524	30	ENG	00000	Allergies
0900019532	0001000030	0000000002	0000000000	AMI	PHOTO	0000013763	30	ENG	00000	Allergies
0900019533	0001000030	0000000003	0000000000	AMI	PHOTO	0000059069	30	ENG	00000	Allergies
0001000152	0001000030	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Food Allergies
0001000031	0001000029	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Exercise
0001000032	0001000029	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Upper Respiratory Infections
0001000033	0001000029	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sinusitis
0001000034	0001000029	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Gastroesophageal Reflux
0001000035	0001000029	0000000006	0000000002	ME	TEXT	0000000000	01	ENG	00000	Emotions and Stress
0900019534	0001000035	0000000001	0000000000	AMI	PHOTO	0000072264	30	ENG	00000	Emotions and Stress
0900019535	0001000035	0000000002	0000000000	AMI	PHOTO	0000075399	30	ENG	00000	Emotions and Stress
0001000036	0001000029	0000000007	0000000001	ME	TEXT	0000000000	01	ENG	00000	Environmental Factors
0900019536	0001000036	0000000001	0000000000	AMI	PHOTO	0000057451	30	ENG	00000	Environmental Factors
0001000037	0001000029	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Weather Conditions
0001000038	0001000028	0000000005	0000000002	ME	TEXT	0000000000	01	ENG	00000	THE INFANT WITH ASTHMA
0900019537	0001000038	0000000001	0000000000	AMI	PHOTO	0000012631	30	ENG	00000	THE INFANT WITH ASTHMA
0900019538	0001000038	0000000002	0000000000	AMI	PHOTO	0000075649	30	ENG	00000	THE INFANT WITH ASTHMA
0001000039	0001000028	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	THE CHILD AT SCHOOL

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0001100040	0001000028	0000000007	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000040	0001100040	0000000001	ME	TEXT	0000000000	01	ENG	00000	Peak Flow Meters
0001000041	0001100040	0000000002	ME	TEXT	0000000000	01	ENG	00000	Environmental Changes
0001000042	0001100040	0000000003	ME	TEXT	0000000000	01	ENG	00000	Medications
0001000153	0001000042	0000000001	ME	TEXT	0000000000	01	ENG	00000	Inhaled Medications
0001000154	0001000042	0000000002	ME	TEXT	0000000000	01	ENG	00000	Cromolyn
0001000155	0001000042	0000000003	ME	TEXT	0000000000	01	ENG	00000	Corticosteroids (steroids)
0001000156	0001000042	0000000004	ME	TEXT	0000000000	01	ENG	00000	Inhaled steroids
0001000157	0001000042	0000000005	ME	TEXT	0000000000	01	ENG	00000	Oral steroids
0001000158	0001000042	0000000006	ME	TEXT	0000000000	01	ENG	00000	Bronchodilators
0001000043	0001100040	0000000004	ME	TEXT	0000000000	01	ENG	00000	Immunotherapy (Allergy Injections)
0001000044	0001100040	0000000005	ME	TEXT	0000000000	01	ENG	00000	Sinus Care
0001000045	0001100040	0000000006	ME	TEXT	0000000000	01	ENG	00000	Emergency Care
0001000047	0001100040	0000000007	ME	TEXT	0000000000	01	ENG	00000	Psychotherapy
0001100048	0001000028	0000000008	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000048	0001100048	0000000001	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000049	0001100048	0000000002	ME	PHOTO	0000012543	30	ENG	00000	Homeopathy
0900019539	0001000049	0000000001	AMI	TEXT	0000000000	01	ENG	00000	Homeopathy
0001000050	0001100048	0000000003	ME	TEXT	0000000000	01	ENG	00000	Acupressure
0001100051	0001000028	0000000009	ME	TEXT	0000000000	01	ENG	00000	Combination Treatments
0001000051	0000000001	0000000006	ME	TEXT	0000000000	01	ENG	00000	Hay Fever and Allergic Rhinitis
0900019540	0001000051	0000000001	AMI	PHOTO	0000050949	30	ENG	00000	Hay fever: Pollen
0900019781	0001000051	0000000002	AMI	PHOTO	0000069547	30	ENG	00000	Hay fever
0001100052	0001000051	0000000003	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000052	0001100052	0000000001	ME	TEXT	0000000000	01	ENG	00000	Diagnosing Your Allergy
0001000159	0001000052	0000000001	ME	TEXT	0000000000	01	ENG	00000	Prick Test
0001000160	0001000052	0000000002	ME	TEXT	0000000000	01	ENG	00000	Nasal Smear
0001000161	0001000052	0000000003	ME	TEXT	0000000000	01	ENG	00000	Scratch Test
0001000162	0001000052	0000000004	ME	TEXT	0000000000	01	ENG	00000	Intradermal
0001000163	0001000052	0000000005	ME	TEXT	0000000000	01	ENG	00000	Blood Tests
0001000053	0001100052	0000000002	ME	TEXT	0000000000	01	ENG	00000	The Three Basic Therapies
0001000164	0001000053	0000000001	ME	TEXT	0000000000	01	ENG	00000	Avoidance
0001000165	0001000053	0000000002	ME	TEXT	0000000000	01	ENG	00000	Immunotherapy
0001000166	0001000053	0000000003	ME	TEXT	0000000000	01	ENG	00000	Medications
0001100054	0001000051	0000000004	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000054	0001100054	0000000001	ME	TEXT	0000000000	01	ENG	00000	Acupuncture
0900019542	0001000054	0000000001	AMI	PHOTO	0000053029	30	ENG	00000	Acupuncture
0001000055	0001100054	0000000002	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000167	0001000055	0000000001	ME	TEXT	0000000000	01	ENG	00000	Stinging Nettle
0001000168	0001000055	0000000002	ME	TEXT	0000000000	01	ENG	00000	Angelica
0001000169	0001000055	0000000003	ME	TEXT	0000000000	01	ENG	00000	Elder
0001000170	0001000055	0000000004	ME	TEXT	0000000000	01	ENG	00000	Ginkgo
0001000171	0001000055	0000000005	ME	TEXT	0000000000	01	ENG	00000	Herbal Teabags
0001000172	0001000055	0000000006	ME	TEXT	0000000000	01	ENG	00000	Sandalwood and Pine Steam Treatment
0001000173	0001000055	0000000007	ME	TEXT	0000000000	01	ENG	00000	Sandalwood Oil
0001000174	0001000055	0000000008	ME	TEXT	0000000000	01	ENG	00000	Bayberry
0001000175	0001000055	0000000009	ME	TEXT	0000000000	01	ENG	00000	Fenugreek
0001000176	0001000055	0000000010	ME	TEXT	0000000000	01	ENG	00000	Mullein
0001000056	0001100054	0000000003	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutritional Supplements
0900019631	0001000056	0000000001	AMI	PHOTO	0000008861	30	ENG	00000	Nutrition: Oranges
0001000177	0001000056	0000000002	ME	TEXT	0000000000	01	ENG	00000	Miso Soup
0001000178	0001000056	0000000003	ME	TEXT	0000000000	01	ENG	00000	Horseradish

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0001000179	0001000056	0000000004	ME	TEXT	0000000000	01	ENG	00000	Cider Vinegar
0001000057	0001100054	0000000004	ME	TEXT	0000000000	01	ENG	00000	Meditation
0900019544	0001000057	0000000001	AMI	PHOTO	0000057448	30	ENG	00000	Meditation
0001000058	0001100054	0000000005	ME	TEXT	0000000000	01	ENG	00000	Homeopathic allergy remedies
0001000059	0001100054	0000000006	ME	TEXT	0000000000	01	ENG	00000	Acupressure
0001000060	0001100054	0000000007	ME	TEXT	0000000000	01	ENG	00000	Reflexology
0900019546	0900000060	0000000001	AMI	PHOTO	0000050576	30	ENG	00000	Reflexology
0001000061	0001000051	0000000005	ME	TEXT	0000000000	01	ENG	00000	Combination Treatments
0001000061	0000000001	0000000007	ME	TEXT	0000000000	01	ENG	00000	Skin Allergies and Eczema
0900019547	0001000061	0000000001	AMI	PHOTO	0000000792	30	ENG	00000	Skin Allergies and Eczema
0001000062	0001000062	0000000002	ME	TEXT	0000000000	01	ENG	00000	GETTING TO THE ROOT OF HIVES
0900019549	0001000062	0000000001	AMI	PHOTO	0000010493	30	ENG	00000	Hives: Causes
0001000063	0001000061	0000000003	ME	TEXT	0000000000	01	ENG	00000	ALLERGIC ECZEMA
0900019783	0001000063	0000000001	AMI	PHOTO	0000000793	30	ENG	00000	Dermatitis treatment
0001000064	0001000061	0000000004	ME	TEXT	0000000000	01	ENG	00000	CONTACT DERMATITIS
0900019552	0001000064	0000000001	AMI	PHOTO	0000012914	30	ENG	00000	Contact dermatitis
0001100065	0001000061	0000000005	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000065	0001100065	0000000001	ME	TEXT	0000000000	01	ENG	00000	Avoidance
0001000066	0001100065	0000000002	ME	TEXT	0000000000	01	ENG	00000	Epinephrine and Emergency Room
Treatment									
0001000067	0001100065	0000000003	ME	TEXT	0000000000	01	ENG	00000	Medications
0001100068	0001000061	0000000006	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000068	0001100068	0000000001	ME	TEXT	0000000000	01	ENG	00000	Hydrotherapy
0900019553	0001000068	0000000001	AMI	PHOTO	0000011511	30	ENG	00000	Hydrotherapy
0900019555	0001000068	0000000002	AMI	PHOTO	0000013921	30	ENG	00000	Chamomile
0001000069	0001100060	0000000002	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000180	0001000069	0000000001	ME	TEXT	0000000000	01	ENG	00000	Burdock
0001000181	0001000069	0000000002	ME	TEXT	0000000000	01	ENG	00000	Black Currant Oil
0001000182	0001000069	0000000003	ME	TEXT	0000000000	01	ENG	00000	Black Walnut
0001000183	0001000069	0000000004	ME	TEXT	0000000000	01	ENG	00000	Evening Primrose Oil
0001000184	0001000069	0000000005	ME	TEXT	0000000000	01	ENG	00000	Calendula (Pot Marigold)
0001000185	0001000069	0000000006	ME	TEXT	0000000000	01	ENG	00000	Chickweed
0001000186	0001000069	0000000007	ME	TEXT	0000000000	01	ENG	00000	Golden Seal
0001000187	0001000069	0000000008	ME	TEXT	0000000000	01	ENG	00000	Oregon Grape
0001000188	0001000069	0000000009	ME	TEXT	0000000000	01	ENG	00000	Yellow Dock
0001000189	0001000069	0000000010	ME	TEXT	0000000000	01	ENG	00000	Red Clover
0001000070	0001100068	0000000003	ME	TEXT	0000000000	01	ENG	00000	Homeopathy
0001000071	0001100068	0000000004	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutrition
0001000072	0001100068	0000000005	ME	TEXT	0000000000	01	ENG	00000	Reflexology
0001000073	0001100068	0000000006	ME	TEXT	0000000000	01	ENG	00000	Acupressure
0001000074	0001100068	0000000007	ME	TEXT	0000000000	01	ENG	00000	Meditation
0001000075	0001000061	0000000007	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000076	0001000061	0000000008	ME	TEXT	0000000000	01	ENG	00000	FOOD ADDITIVE ALLERGIES
0900019558	0001000076	0000000001	AMI	PHOTO	0000010528	30	ENG	00000	Food additive allergies
0001000190	0001000076	0000000002	ME	TEXT	0000000000	01	ENG	00000	Aspartame
0001000191	0001000076	0000000003	ME	TEXT	0000000000	01	ENG	00000	BHT/BHA
0001000192	0001000076	0000000004	ME	TEXT	0000000000	01	ENG	00000	Monosodium Glutamate (MSG)
0001000193	0001000076	0000000005	ME	TEXT	0000000000	01	ENG	00000	Nitrate/Nitrites
0001000194	0001000076	0000000006	ME	TEXT	0000000000	01	ENG	00000	Parabens
0001000195	0001000076	0000000007	ME	TEXT	0000000000	01	ENG	00000	Sulfites
0001000196	0001000076	0000000008	ME	TEXT	0000000000	01	ENG	00000	FD & C Yellow No. 5
0001000077	0001000061	0000000009	ME	TEXT	0000000000	01	ENG	00000	ORAL ALLERGY SYNDROME

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0001000078	0001000061	0000000010	0000000000	ME	TEXT	0000000000	01	ENG	00000	LEAKY GUT SYNDROME
0001000079	0001000061	0000000011	0000000000	ME	TEXT	0000000000	01	ENG	00000	LIVER DETOXIFICATION AND FOOD ALLERGY
0001100080	0001000061	0000000012	0000000001	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000080	0001100080	0000000001	0000000006	ME	TEXT	0000000000	01	ENG	00000	Diagnosis
0900019780	0001000080	0000000001	0000000000	AMI	PHOTO	0000004310	30	ENG	00000	Scratch test
0001000197	0001000080	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Skin Testing
0001000198	0001000080	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Elimination Diet
0001000199	0001000080	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Offending Food
0001000200	0001000080	0000000005	0000000002	ME	TEXT	0000000000	01	ENG	00000	Nutritional Substitutes
0001100200	0001000200	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Egg Substitutes
0001200200	0001000200	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Dairy Replacements
0001000201	0001000080	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Epinephrine
0001100081	0001000061	0000000013	0000000004	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000081	0001100081	0000000001	0000000007	ME	TEXT	0000000000	01	ENG	00000	Testing for Food Allergies
0001000202	0001000081	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Food Cytotoxic Blood Test
0001000203	0001000081	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	The Pulse Test
0001000204	0001000081	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Muscle Response Testing
0001000205	0001000081	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Functional Liver Detoxification
Profile										
0001000206	0001000081	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Intestinal Permeability Test
0001000207	0001000081	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Bacterial Overgrowth Breath Test
0001000208	0001000081	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Hydrochloric Acid Test
0001000082	0001100081	0000000002	0000000003	ME	TEXT	0000000000	01	ENG	00000	Dietary Changes
0900019560	0001000082	0000000001	0000000000	AMI	PHOTO	0000074681	30	ENG	00000	Vegetarian diet
0001000209	0001000082	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Rotation Diet
0001000210	0001000082	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Vegetarian Diet
0001000083	0001100081	0000000003	0000000001	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0900019561	0001000083	0000000001	0000000000	AMI	PHOTO	0000013447	30	ENG	00000	Herbal Treatments
0001000084	0001100081	0000000004	0000000004	ME	TEXT	0000000000	01	ENG	00000	Alternative Practitioners
0900019562	0001000084	0000000001	0000000000	AMI	PHOTO	0000081065	30	ENG	00000	Chiropractor
0001000211	0001000084	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Alternative Health Care Provider
0001000212	0001000084	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Homeopathy
0001000213	0001000084	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Chiropractor/Nutritionist
0001100085	0001000061	0000000014	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000085	0000000001	0000000008	0000000004	ME	TEXT	0000000000	01	ENG	00000	Food Sensitivities
0001000086	0001000085	0000000001	0000000005	ME	TEXT	0000000000	01	ENG	00000	FOOD INTOLERANCE
0001000087	0001000086	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Fructose Intolerance
0001000089	0001000086	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sucrose Intolerance
0001000090	0001000086	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Maltose Intolerance
0001000091	0001000086	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Additives
0001000092	0001000086	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Other causes of food sensitivities
0001100093	0001000085	0000000002	0000000003	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000093	0001100093	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Diagnosis
0001000094	0001100093	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Adjusting Your Diet
0001000095	0001100093	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Nonprescription medications
0001100096	0001000085	0000000003	0000000005	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000096	0001100096	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Breath Hydrogen/Methane Testing
0001000097	0001100096	0000000002	0000000001	ME	TEXT	0000000000	01	ENG	00000	Alternative Health Care Provider
0001000239	0001000097	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Acupressure
0001100098	0001100096	0000000003	0000000006	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000214	0001000098	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Peppermint Tea
0001000215	0001000098	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Chamomile

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0001000216	0001000098	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Ginger
0001000217	0001000098	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Slippery Elm
0001000218	0001000098	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Golden Seal
0001000219	0001000098	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Meadowsweet
0001000099	0001100096	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutrition
0001000100	0001100096	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Homeopathic Remedies
0001100101	0001000085	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000101	0000000001	0000000009	0000000004	ME	TEXT	0000000000	01	ENG	00000	Industrial and Environmental
Allergies										
0001000102	0001000101	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	WHAT CAUSES INDUSTRIAL AND INORGANIC
ALLERGIES?										
0001000103	0001000101	0000000002	0000000005	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000103	0001100103	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Physical Examinations
0001000104	0001100103	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Skin Testing
0001000105	0001100103	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Journal/Daily Log
0001000106	0001100103	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Immunotherapy (allergy injections)
0001000107	0001100103	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Avoidance
0001100108	0001000101	0000000003	0000000002	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000108	0001100108	0000000001	0000000003	ME	TEXT	0000000000	01	ENG	00000	Diagnosis
0001000220	0001000108	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Intracutaneous One-to-Five Serial
Dilution Titration										
0001000221	0001000108	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Clinical Titration
0001000222	0001000108	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Functional Liver Detoxification
Profile										
0001000109	0001100108	0000000002	0000000003	ME	TEXT	0000000000	01	ENG	00000	Various Therapies
0001000223	0001000109	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Massage
0001000224	0001000109	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000225	0001000109	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Hydrotherapy
0001100110	0001000101	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000110	0000000001	0000000010	0000000008	ME	TEXT	0000000000	01	ENG	00000	Juvenile Allergies
0001000111	0001000110	0000000001	0000000001	ME	TEXT	0000000000	01	ENG	00000	EXPLORING THE ROOTS OF JUVENILE
ALLERGIES										
0900019563	0001000111	0000000001	0000000000	ANI	PHOTO	0000059076	30	ENG	00000	Allergy testing: Juvenile
0001000112	0001000110	0000000002	0000000001	ME	TEXT	0000000000	01	ENG	00000	MILK ALLERGY AND LACTOSE INTOLERANCE
0900019782	0001000112	0000000001	0000000000	ANI	PHOTO	0000011619	30	ENG	00000	Breast milk
0001000113	0001000110	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	SKIN ALLERGIES
0001000114	0001000110	0000000004	0000000001	ME	TEXT	0000000000	01	ENG	00000	ALLERGIC RHINITIS AND HAY FEVER
0900019564	0001000114	0000000001	0000000000	ANI	PHOTO	0000008520	30	ENG	00000	Hay fever: Juveniles
0001000115	0001000110	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	FOOD ALLERGY
0001100116	0001000110	0000000006	0000000001	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000116	0001100116	0000000001	0000000007	ME	TEXT	0000000000	01	ENG	00000	Medications
0001000226	0001000116	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Corticosteroid Nasal Sprays
0001000227	0001000116	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Nasal Corticosteroids
0001000228	0001000116	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Antihistamines
0001000229	0001000116	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Cromolyn Sodium Nasal Sprays
0001000230	0001000116	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Hydrocortisone
0001000231	0001000116	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Decongestants
0001000232	0001000116	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Immunotherapy (Allergy Shots)
0001100117	0001000110	0000000007	0000000003	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000117	0001100117	0000000001	0000000004	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000233	0001000117	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Ginger
0001000234	0001000117	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Calendula (Pot Marigold)

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0001000235	0001000117	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Comfrey
0001000236	0001000117	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Burdock
0001000118	0001100117	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutrition
0001000120	0001100117	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Homeopathy
0001100237	0001000110	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000237	0000000001	0000000011	0000000000	ME	TEXT	0000000000	01	ENG	00000	Appendix: Resources and Organizations
0001000121	0000000001	0000000012	0000000000	ME	TEXT	0000000000	01	ENG	00000	Glossary
0999999999	0000000001	0000000013	0000000000	MB	TEXT	0000000000	01	ENG	00000	Copyright and Use of Text and
Multimedia Content										
0999999998	4294967295	4294967295	4294967295	MB	TEXT	0000000000	01	ENG	00000	Overview

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The Library table 493 is typically filled with results representing the individual user's library. The bookstat field is also termed the BS field. The newstat field is also termed the NS field. The Booktype field is also termed the BT field. The DOtype field is also termed the DO field. The Tabletype field is also termed the TB field. The Bookpath field is also termed the PATH field. The Tempname field is also termed herein the TEMPLATE field. As shown, the user's library includes only two books. An example of a Library table 493 is as follows:

ID	BS	NS	BT	DO	TB	PATH	TEMPLATE	ISBN	NAME
0000000001	00	00	01	01	20	0-8343-0103-2	Reference	0-8343-0103-2	Funk & Wagnalls Encyclopedia
0000000002	00	00	01	01	20	0-517-18069-3	Reference	0-517-18069-3	Concise Dictionary of Great 20th Century Biographies

An example of a Query String Results table 423, filled with data which represents results of queries performed on the above-referenced book entitled "Treating asthma...", is as follows:

Name	Count
press	1
nutrition	1
form	6
department	1
new	2
york	1
college	1
president	1
council	1
medicine	9
date	2
back	4
history	6
base	4
magic	1
folk	1
old	2
tale	1
surgery	1
natural	5
chemical	4
research	2
human	2
health	26
movement	1
medical	6
procedure	1
great	4
illness	2
people	10
asthma	30
fact	4
cough	5
life	2
first	7
record	5
reaction	5
food	27
father	1
power	4
observation	1
cheese	2
individual	4
skin	17
allergy	10
range	1
condition	6
general	4
hive	9
tissue	2
fever	3
mouth	2
word	1
rose	1
smell	1

chest	5
star	2
common	16
sign	1
exercise	3
breathing	6
chronic	5
circle	2
sleep	1
order	2
stage	1
diagnosis	4
physical	7
doctor	7
weight	2
treatment	12
measure	4
immune	8
system	11
body	20
infection	4
cat	1
plant	1
stomach	5
herb	7
world	1
long	5
root	2
principle	1
electromagnetic	1
force	1
series	1
conductor	1
energy	2
organ	4
emotion	5
spirit	1
national	1
institute	1
grant	2
prayer	1
drug	3
abuse	1
program	3
mass	3
method	5
stress	10
management	1
chance	2
import	3
defense	1
spinal	1
nervous	1
muscle	2
current	1
disease	2
infant	5

children	16
age	1
american	1
environment	3
climate	2
high	2
substance	3
house	1
dust	6
period	1
time	3
solution	4
hand	2
sinus	2
bacteria	1
acid	1
response	1
play	1
fear	1
pattern	1
smoke	1
odor	1
air	3
pollution	1
lung	4
rain	1
hot	2
draft	1
red	3
school	1
official	2
education	1
nurse	1
peak	1
instrument	1
foundation	1
sound	1
right	2
matter	1
trial	1
inflammation	2
antibiotics	2
combat	2
act	1
emergency	2
poker	1
therapy	3
psychotherapist	1
arsenic	1
store	1
pressure	4
fungus	1
family	2
passage	3
fuel	1
society	1
eating	1

formula	1
mental	1
balance	2
technique	2
toxic	2
extreme	2
spring	1
crust	1
soap	1
fortune	1
temperature	1
solvent	1
earl	2
bloc	1
zinc	1
oxide	1
consul	2
product	2
diet	6
sense	1
jewelry	1
cloth	1
way	3
color	1
shape	1
additive	2
day	1
oral	1
vegetable	1
parsley	1
formation	1
lead	2
nutrient	1
particle	1
liver	1
monkey	1
examination	3
blood	2
field	1
controversy	1
tea	1
commercial	2
indigestion	1
gas	2
milk	5
drink	1
fruit	2
sugar	2
enzyme	2
glucose	2
disorder	2
cancer	1
reason	1
degree	1
relief	1
powder	1
hydrogen	1

standard	1
carbohydrate	1
laboratory	2
north	1
carolina	1
digestive	1
home	1
water	1
foreign	1
elderly	1
fine	1
pain	1
tool	1
industrial	1
inorganic	1
design	1
parent	2
eye	1
penicillin	1
sulfur	1
insulin	1
moth	1
nature	1
interest	1
custom	1

The Preferences table 804 is a general table which is filled with data which represents general user preferences. An example of a Preferences table 804 is as follows:

Name	Value
language	English
BinderTitle	<CENTER> <P> <H1>Contents of **VB_NAME_OF_ITEM**</H1> </CENTER>
BinderArticleBegin	<LEFT> <H3>**VB_NUMBER_OF_ARTICLE**. **VB_NAME_OF_ITEM**</H3> <H4>(**VB_NAME_OF_BOOK**)</H4> </LEFT>
BinderABeginWP	<LEFT> <H3>**VB_NUMBER_OF_ARTICLE**. **VB_NAME_OF_ITEM** - **VB_NAME_OF_PARENT**</H3> <H4>(**VB_NAME_OF_BOOK**)</H4> </LEFT>
BinderTCEntry	<LEFT>

<H3>**VB_NUMBER_OF_ARTICLE**. **VB_NAME_OF_ITEM**.</H3>

</LEFT>

BindTCEntryWP

<LEFT>

<H3>**VB_NUMBER_OF_ARTICLE**. **VB_NAME_OF_ITEM** - **VB_NAME_OF_PARENT**.</H3>

</LEFT>

BinderAEnd

<CENTER>

<P>

<HR>

</CENTER>

Flashpix HLink
Link File Contents

<HTML>

<HEAD>

</HEAD>

<BODY BACKGROUND="**attributes**">

<SCRIPT LANGUAGE="JavaScript">

location.href="**Kovetz**"

</SCRIPT>

</BODY>

</HTML>

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```
Internet Media CGI
                        http://cgi.versabook.com/scripts/redirectcgi.exe?functio
n=getmedia&MediaDBID=**MediaDBaidee**&RegistrationID=**aidee**&Embed=**kenOlo**&
Format=**Sug**
Versabook Server URL    vbeng.versabook.co.il
Downloads URL           downloads
Al Hapanim              30
SaveArticle             0
AddToCurrentBinder      0
MultipleWords           2
MediaHyperLinks         1
SubArticles             1
ScoreMethod             1
Exe Download CGI
                        cgi.versabook.com/scripts/redirectcgi.exe?function=downl
oad&RegistrationID=**aidee**&CurrentVersion=**version**
UpdateReportDate        03/10/1998
LibView                 2
HistListSize            50
StartUpMode             1
ArticleID               1
BookID                  1
LastMDBID               0
LastDateNoLine          02/24/1998
BrowserFontSize         2
TextHyperLinks          1
ToolButtonSounds        1
AutomaticUpdate         0
NoLineAlertStatus       0
NoLineAlertTime         0
Versabook Server Nam    Versabook Bookstore
Active Store Name       versabook.versabook.co.il
Active Store URL        versabook.versabook.co.il
FullTextOptions         1
SortingOrder            2
MaxSearchHits           1000
TopNumberOfHits         100
Bookstore Name          Versabook Bookstore
Bookstore Name          versabook.versabook.co.il
Bookstore URL
                        http://cgi.versabook.com/scripts/redirectcgi.exe?functio
n=signin&RegistrationID=**aidee**
Bookstore URL           vbeng.versabook.co.il
```

An example of a Tree Table 401, filled with data which represents the tree structure of the above-referenced book entitled "treating asthma...", now follows:

Sample Tree Table

ID	Parent	ChildNum	Num Child	MO	Media	MediaDBID	DU	Lan	Vrsn	Name
0000000001	0000000000	0000000001	0000000013	MC	TEXT	0000000000	01	ENG	00000	Treating Asthma, Allergies, and Food Sensitivies
0001000000	0000000001	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	About this book
0001000001	0000000001	0000000002	0000000004	ME	TEXT	0000000000	01	ENG	00000	Introduction
0001001001	0001000001	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	ARE YOU HEALTHY?
0001000002	0001000001	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	TRADITIONAL MEDICINE: A BRIEF HISTORY
0001000003	0001000001	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	ALTERNATIVE MEDICINE: A BRIEF HISTORY
0001000004	0001000001	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	THE PHYSICIANS' GUIDES TO HEALING
0001000005	0000000001	0000000003	0000000004	ME	TEXT	0000000000	01	ENG	00000	Asthma, Allergies, and Food Sensitivities
0001000006	0001000005	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	ASTHMA
0001000007	0001000005	0000000002	0000000003	ME	TEXT	0000000000	01	ENG	00000	ALLERGIES
0001000008	0001000007	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Food Allergy
0001000009	0001000007	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Skin Allergy
0001000010	0001000007	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Allergic Rhinitis and Hay Fever
0001000011	0001000005	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	FOOD SENSITIVITIES
0001000012	0001000005	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	TREATMENTS FOR ASTHMA, ALLERGIES, AND FOOD SENSITIVITIES
0001000014	0000000001	0000000004	0000000005	ME	TEXT	0000000000	01	ENG	00000	Adult Asthma
0900019789	0001000014	0000000001	0000000000	AMI	VIDEO	0000127261	30	ENG	00000	Asthma
0001000015	0001000014	0000000002	0000000002	ME	TEXT	0000000000	01	ENG	00000	WHAT HAPPENS DURING AN ASTHMA ATTACK?
0900019499	0001000015	0000000001	0000000000	AMI	PHOTO	0000050291	30	ENG	00000	Asthma attack
0001000016	0001000015	0000000002	0000000011	ME	TEXT	0000000000	01	ENG	00000	Triggers of an Asthma Attack
0900019500	0001000016	0000000001	0000000000	AMI	PHOTO	0000001348	30	ENG	00000	Asthma Attack: Sinusitus
0900019502	0001000016	0000000002	0000000000	AMI	PHOTO	0000074372	30	ENG	00000	Asthma Attack: Aspirin
0001000122	0001000016	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Allergies
0001000123	0001000016	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Food Additives
0001000124	0001000016	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Exercise
0001000125	0001000016	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Viral Respiratory-Tract Infection
0001000126	0001000016	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sinusitis
0001000127	0001000016	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Stress and Emotion
0001000128	0001000016	0000000009	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sensitivity to Aspirin
0001000129	0001000016	0000000010	0000000000	ME	TEXT	0000000000	01	ENG	00000	Environmental Irritants
0001000130	0001000016	0000000011	0000000000	ME	TEXT	0000000000	01	ENG	00000	Occupational Factors
0001100017	0001000014	0000000003	0000000003	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000017	0001100017	0000000001	0000000008	ME	TEXT	0000000000	01	ENG	00000	Diagnosis
0900019634	0001000017	0000000001	0000000000	AMI	PHOTO	0000057813	30	ENG	00000	Exercise challenge test
0001000131	0001000017	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Spirometry/Pulmonary Function Tests
0001000132	0001000017	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sputum Examination
0001000133	0001000017	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Methacholine/Histamine Challenge
0001000134	0001000017	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Exercise Challenge Tests
0001000135	0001000017	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Arterial Gas Tests
0001000136	0001000017	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sinus X Ray
0001000137	0001000017	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Skin Testing
0001000018	0001100017	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Monitoring Your Asthma: The Peak Flow Meter
0001000019	0001100017	0000000003	0000000005	ME	TEXT	0000000000	01	ENG	00000	Preventative Measures

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0900019811	0001000019	0000000001	0000000000	AMI	PHOTO	0000018266	30	ENG	00000	Asthma: Inhaler
0001000138	0001000019	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Evironmental Changes
0001000139	0001000019	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Medication
0001000140	0001000019	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Immunotherapy (Allergy Injections)
0001000141	0001000019	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sinus Care
0001100020	0001000014	0000000004	0000000008	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000020	0001100020	0000000001	0000000002	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutrition
0900019507	0001000020	0000000001	0000000000	AMI	PHOTO	0000013458	30	ENG	00000	Diet and Nutrition
0900019517	0001000020	0000000002	0000000000	AMI	PHOTO	0000071290	30	ENG	00000	Diet and Nutrition: Green tea
0001000021	0001100020	0000000002	0000000011	ME	TEXT	0000000000	01	ENG	00000	Herbal medicine
0900019520	0001000021	0000000001	0000000000	AMI	PHOTO	0000015357	30	ENG	00000	Herbal medicine: Sage
0900019521	0001000021	0000000002	0000000000	AMI	PHOTO	0000015537	30	ENG	00000	Herbal medicine: Eucalyptus
0900019522	0001000021	0000000003	0000000000	AMI	PHOTO	0000047011	30	ENG	00000	Herbal medicine: Ginseng
0001000142	0001000021	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Siberian Ginseng
0001000143	0001000021	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Mullein
0001000144	0001000021	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Fenugreek
0001000145	0001000021	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Catnip
0001000146	0001000021	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sage
0001000147	0001000021	0000000009	0000000000	ME	TEXT	0000000000	01	ENG	00000	Passion Flower
0001000148	0001000021	0000000010	0000000000	ME	TEXT	0000000000	01	ENG	00000	Eucalyptus
0001000149	0001000021	0000000011	0000000000	ME	TEXT	0000000000	01	ENG	00000	Angelica
0001000022	0001100020	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Acupuncture
0001000023	0001100020	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Psychotherapy
0001000024	0001100020	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Osteopathy
0001000025	0001100020	0000000006	0000000001	ME	TEXT	0000000000	01	ENG	00000	Massage
0900019525	0001000025	0000000000	0000000000	AMI	PHOTO	0000075398	30	ENG	00000	Massage
0001000026	0001100020	0000000007	0000000003	ME	TEXT	0000000000	01	ENG	00000	Homeopathy
0001000238	0001000026	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Yoga
0001000150	0001000026	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	The Mountain
0001000151	0001000026	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	The Complete Breath
0001000027	0001100020	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Chiropractic
0001000028	0001000014	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000028	0000000001	0000000005	0000000009	ME	TEXT	0000000000	01	ENG	00000	Juvenile Asthma
0900019528	0001000028	0000000001	0000000000	AMI	PHOTO	0000058989	30	ENG	00000	Juvenile Asthma
0900019529	0001000028	0000000002	0000000000	AMI	PHOTO	0000069548	30	ENG	00000	Juvenile Asthma
0900019530	0001000028	0000000003	0000000000	AMI	PHOTO	0000074454	30	ENG	00000	Juvenile Asthma
0001000029	0001000028	0000000004	0000000008	ME	TEXT	0000000000	01	ENG	00000	WHAT TRIGGERS AN ASTHMA ATTACK?
0001000030	0001000029	0000000001	0000000004	ME	TEXT	0000000000	01	ENG	00000	Allergies
0900019531	0001000030	0000000001	0000000000	AMI	PHOTO	0000008524	30	ENG	00000	Allergies
0900019532	0001000030	0000000002	0000000000	AMI	PHOTO	0000013763	30	ENG	00000	Allergies
0900019533	0001000030	0000000003	0000000000	AMI	PHOTO	0000059069	30	ENG	00000	Allergies
0001000152	0001000030	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Food Allergies
0001000031	0001000029	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Exercise
0001000032	0001000029	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Upper Respiratory Infections
0001000033	0001000029	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sinusitis
0001000034	0001000029	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Gastroesophageal Reflux
0001000035	0001000029	0000000006	0000000002	ME	TEXT	0000000000	01	ENG	00000	Emotions and Stress
0900019534	0001000035	0000000001	0000000000	AMI	PHOTO	0000072264	30	ENG	00000	Emotions and Stress
0900019535	0001000035	0000000002	0000000000	AMI	PHOTO	0000075399	30	ENG	00000	Emotions and Stress
0001000036	0001000029	0000000007	0000000001	ME	TEXT	0000000000	01	ENG	00000	Environmental Factors
0900019536	0001000036	0000000001	0000000000	AMI	PHOTO	0000057451	30	ENG	00000	Environmental Factors
0001000037	0001000029	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Weather Conditions

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0001000038	0001000028	0000000005	0000000002	ME	TEXT	0000000000	01	ENG	00000	THE INFANT WITH ASTHMA
0900019537	0001000038	0000000001	0000000000	AMI	PHOTO	0000012631	30	ENG	00000	THE INFANT WITH ASTHMA
0900019538	0001000038	0000000002	0000000000	AMI	PHOTO	0000075649	30	ENG	00000	THE INFANT WITH ASTHMA
0001000039	0001000028	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	THE CHILD AT SCHOOL
0001100040	0001000028	0000000007	0000000007	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000040	0001100040	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Peak Flow Meters
0001100041	0001100040	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Environmental Changes
0001000042	0001100040	0000000003	0000000006	ME	TEXT	0000000000	01	ENG	00000	Medications
0001000153	0001000042	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Inhaled Medications
0001000154	0001000042	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Cromolyn
0001000155	0001000042	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Corticosteroids (steroids)
0001000156	0001000042	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Inhaled steroids
0001000157	0001000042	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Oral steroids
0001000158	0001000042	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Bronchodilators
0001000043	0001100040	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Immunotherapy (Allergy Injections)
0001000044	0001100040	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sinus Care
0001000045	0001100040	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Emergency Care
0001000047	0001100040	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Psychotherapy
0001100048	0001000028	0000000008	0000000003	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000048	0001100048	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001100049	0001100048	0000000002	0000000001	ME	TEXT	0000000000	01	ENG	00000	Homeopathy
0900019539	0001000049	0000000001	0000000000	AMI	PHOTO	0000012543	30	ENG	00000	Homeopathy
0001000050	0001100048	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Acupressure
0001100051	0001000028	0000000009	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combination Treatments
0001000051	0000000001	0000000006	0000000005	ME	TEXT	0000000000	01	ENG	00000	Hay Fever and Allergic Rhinitis
0900019540	0001000051	0000000001	0000000000	AMI	PHOTO	0000050949	30	ENG	00000	Hay fever: Pollen
0900019781	0001000051	0000000002	0000000000	AMI	PHOTO	0000069547	30	ENG	00000	Hay fever
0001100052	0001000051	0000000003	0000000002	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000052	0001100052	0000000001	0000000005	ME	TEXT	0000000000	01	ENG	00000	Diagnosing Your Allergy
0001000159	0001000052	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Prick Test
0001000160	0001000052	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Nasal Smear
0001000161	0001000052	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Scratch Test
0001000162	0001000052	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Intradermal
0001000163	0001000052	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Blood Tests
0001000053	0001100052	0000000002	0000000003	ME	TEXT	0000000000	01	ENG	00000	The Three Basic Therapies
0001000164	0001000053	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Avoidance
0001000165	0001000053	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Immunotherapy
0001000166	0001000053	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Medications
0001100054	0001000051	0000000004	0000000007	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000054	0001100054	0000000001	0000000001	ME	TEXT	0000000000	01	ENG	00000	Acupuncture
0900019542	0001000054	0000000001	0000000000	AMI	PHOTO	0000053829	30	ENG	00000	Acupuncture
0001000055	0001100054	0000000002	0000000010	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000167	0001000055	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Stinging Nettle
0001000168	0001000055	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Angelica
0001000169	0001000055	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Elder
0001000170	0001000055	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Ginkgo
0001000171	0001000055	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Herbal Teabags
0001000172	0001000055	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sandalwood and Pine Steam Treatment
0001000173	0001000055	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sandalwood Oil
0001000174	0001000055	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Bayberry
0001000175	0001000055	0000000009	0000000000	ME	TEXT	0000000000	01	ENG	00000	Fenugreek
0001000176	0001000055	0000000010	0000000000	ME	TEXT	0000000000	01	ENG	00000	Mullein

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0001000056	0001100054	0000000003	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutritional Supplements
0900019631	0001000056	0000000001	AMI	PHOTO	0000008861	30	ENG	00000	Nutrition: Oranges
0001000177	0001000056	0000000002	ME	TEXT	0000000000	01	ENG	00000	Miso Soup
0001000178	0001000056	0000000003	ME	TEXT	0000000000	01	ENG	00000	Horseradish
0001000179	0001000056	0000000004	ME	TEXT	0000000000	01	ENG	00000	Cider Vinegar
0001000057	0001100054	0000000004	ME	TEXT	0000000000	01	ENG	00000	Meditation
0900019544	0001000057	0000000001	AMI	PHOTO	0000057448	30	ENG	00000	Meditation
0001000058	0001100054	0000000005	ME	TEXT	0000000000	01	ENG	00000	Homeopathic allergy remedies
0001000059	0001100054	0000000006	ME	TEXT	0000000000	01	ENG	00000	Acupressure
0001000060	0001100054	0000000007	ME	TEXT	0000000000	01	ENG	00000	Reflexology
0900019546	0001000060	0000000001	AMI	PHOTO	0000056576	30	ENG	00000	Reflexology
0001100061	0001000051	0000000005	ME	TEXT	0000000000	01	ENG	00000	Combination Treatments
0001000061	0000000001	0000000007	ME	TEXT	0000000000	01	ENG	00000	Skin Allergies and Eczema
0900019547	0001000061	0000000001	AMI	PHOTO	0000000792	30	ENG	00000	Skin Allergies and Eczema
0001000062	0001000061	0000000002	ME	TEXT	0000000000	01	ENG	00000	GETTING TO THE ROOT OF HIVES
0900019549	0001000062	0000000001	AMI	PHOTO	0000010493	30	ENG	00000	Hives: Causes
0001000063	0001000061	0000000003	ME	TEXT	0000000000	01	ENG	00000	ALLERGIC ECZEMA
0900019783	0001000063	0000000001	AMI	PHOTO	0000000793	30	ENG	00000	Dermatitis treatment
0001000064	0001000061	0000000004	ME	TEXT	0000000000	01	ENG	00000	CONTACT DERMATITIS
0900019552	0001000064	0000000001	AMI	PHOTO	0000012914	30	ENG	00000	Contact dermatitis
0001100065	0001000061	0000000005	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000065	0001100065	0000000001	ME	TEXT	0000000000	01	ENG	00000	Avoidance
0001000066	0001100065	0000000002	ME	TEXT	0000000000	01	ENG	00000	Epinephrine and Emergency Room Treatment
0001000067	0001100065	0000000003	ME	TEXT	0000000000	01	ENG	00000	Medications
0001100068	0001000061	0000000006	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000068	0001100068	0000000001	ME	TEXT	0000000000	01	ENG	00000	Hydrotherapy
0900019553	0001000068	0000000001	AMI	PHOTO	0000011511	30	ENG	00000	Hydrotherapy
0900019555	0001000068	0000000002	AMI	PHOTO	0000013921	30	ENG	00000	Chamomile
0001000069	0001100068	0000000002	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000180	0001000069	0000000001	ME	TEXT	0000000000	01	ENG	00000	Burdock
0001000181	0001000069	0000000002	ME	TEXT	0000000000	01	ENG	00000	Black Currant Oil
0001000182	0001000069	0000000003	ME	TEXT	0000000000	01	ENG	00000	Black Walnut
0001000183	0001000069	0000000004	ME	TEXT	0000000000	01	ENG	00000	Evening Primrose Oil
0001000184	0001000069	0000000005	ME	TEXT	0000000000	01	ENG	00000	Calendula (Pot Marigold)
0001000185	0001000069	0000000006	ME	TEXT	0000000000	01	ENG	00000	Chickweed
0001000186	0001000069	0000000007	ME	TEXT	0000000000	01	ENG	00000	Golden Seal
0001000187	0001000069	0000000008	ME	TEXT	0000000000	01	ENG	00000	Oregon Grape
0001000188	0001000069	0000000009	ME	TEXT	0000000000	01	ENG	00000	Yellow Dock
0001000189	0001000069	0000000010	ME	TEXT	0000000000	01	ENG	00000	Red Clover
0001000070	0001100068	0000000003	ME	TEXT	0000000000	01	ENG	00000	Homeopathy
0001000071	0001100068	0000000004	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutrition
0001000072	0001100068	0000000005	ME	TEXT	0000000000	01	ENG	00000	Reflexology
0001000073	0001100068	0000000006	ME	TEXT	0000000000	01	ENG	00000	Acupressure
0001000074	0001100068	0000000007	ME	TEXT	0000000000	01	ENG	00000	Meditation
0001000075	0001000061	0000000007	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000076	0001000061	0000000008	ME	TEXT	0000000000	01	ENG	00000	FOOD ADDITIVE ALLERGIES
0900019558	0001000076	0000000001	AMI	PHOTO	0000010528	30	ENG	00000	Food additive allergies
0001000190	0001000076	0000000002	ME	TEXT	0000000000	01	ENG	00000	Aspartame
0001000191	0001000076	0000000003	ME	TEXT	0000000000	01	ENG	00000	BHT/BHA
0001000192	0001000076	0000000004	ME	TEXT	0000000000	01	ENG	00000	Monosodium Glutamate (MSG)
0001000193	0001000076	0000000005	ME	TEXT	0000000000	01	ENG	00000	Nitrate/Nitrites

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0001000194	0001000076	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Parabens
0001000195	0001000076	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sulfites
0001000196	0001000076	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	FD & C Yellow No. 5
0001000077	0001000061	0000000009	0000000000	ME	TEXT	0000000000	01	ENG	00000	ORAL ALLERGY SYNDROME
0001000078	0001000061	0000000010	0000000000	ME	TEXT	0000000000	01	ENG	00000	LEAKY GUT SYNDROME
0001000079	0001000061	0000000011	0000000000	ME	TEXT	0000000000	01	ENG	00000	LIVER DETOXIFICATION AND FOOD ALLERGY
0001100080	0001000061	0000000012	0000000001	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000080	0001100080	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Diagnosis
0900019780	0001000080	0000000001	0000000000	AMI	PHOTO	0000004310	30	ENG	00000	Scratch test
0001000197	0001000080	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Skin Testing
0001000198	0001000080	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Elimination Diet
0001000199	0001000080	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Offending Food
0001000200	0001000080	0000000005	0000000002	ME	TEXT	0000000000	01	ENG	00000	Nutritional Substitutes
0001100200	0001000200	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Egg Substitutes
0001200200	0001000200	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Dairy Replacements
0001000201	0001000080	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Epinephrine
0001100081	0001000061	0000000013	0000000004	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000081	0001100081	0000000001	0000000007	ME	TEXT	0000000000	01	ENG	00000	Testing for Food Allergies
0001000202	0001000081	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Food Cytotoxic Blood Test
0001000203	0001000081	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	The Pulse Test
0001000204	0001000081	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Muscle Response Testing
0001000205	0001000081	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Functional Liver Detoxification
Profile:										
0001000206	0001000081	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Intestinal Permeability Test
0001000207	0001000081	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Bacterial Overgrowth Breath Test
0001000208	0001000081	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Hydrochloric Acid Test
0001000082	0001100081	0000000002	0000000003	ME	TEXT	0000000000	01	ENG	00000	Dietary Changes
0900019560	0001000082	0000000001	0000000000	AMI	PHOTO	0000074681	30	ENG	00000	Vegetarian diet
0001000209	0001000082	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Rotation Diet
0001000210	0001000082	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Vegetarian Diet
0001000083	0001100081	0000000001	0000000001	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0900019561	0001000083	0000000001	0000000000	AMI	PHOTO	0000013447	30	ENG	00000	Herbal Treatments
0001000084	0001100081	0000000004	0000000004	ME	TEXT	0000000000	01	ENG	00000	Alternative Practitioners
0900019562	0001000084	0000000001	0000000000	AMI	PHOTO	0000081065	30	ENG	00000	Chiropractor
0001000211	0001000084	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Alternative Health Care Provider
0001000212	0001000084	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Homeopathy
0001000213	0001000084	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Chiropractor/Nutritionist
0001100085	0001000061	0000000014	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000085	0000000001	0000000008	0000000004	ME	TEXT	0000000000	01	ENG	00000	Food Sensitivities
0001000086	0001000085	0000000001	0000000005	ME	TEXT	0000000000	01	ENG	00000	FOOD INTOLERANCE
0001000087	0001000086	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Fructose Intolerance
0001000089	0001000086	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Sucrose Intolerance
0001000090	0001000086	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Maltose Intolerance
0001000091	0001000086	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Additives
0001000092	0001000086	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Other causes of food sensitivities
0001100093	0001000085	0000000002	0000000003	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000093	0001100093	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Diagnosis
0001000094	0001100093	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Adjusting Your Diet
0001000095	0001100093	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Nonprescription medications
0001100096	0001000085	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000096	0001100096	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Breath Hydrogen/Methane Testing
0001000097	0001100096	0000000002	0000000001	ME	TEXT	0000000000	01	ENG	00000	Alternative Health Care Provider

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0001000239	0001000097	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Acupressure
0001000098	0001100096	0000000003	0000000006	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000214	0001000098	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Peppermint Tea
0001000215	0001000098	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Chamomile
0001000216	0001000098	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Ginger
0001000217	0001000098	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Slippery Elm
0001000218	0001000098	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Golden Seal
0001000219	0001000098	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Meadowsweet
0001000099	0001100096	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutrition
0001000100	0001100096	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Homeopathic Remedies
0001100101	0001000085	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000101	0000000001	0000000009	0000000004	ME	TEXT	0000000000	01	ENG	00000	Industrial and Environmental
Allergies										
0001000102	0001000101	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	WHAT CAUSES INDUSTRIAL AND INORGANIC
ALLERGIES?										
0001100103	0001000101	0000000002	0000000005	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000103	0001100103	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Physical Examinations
0001000104	0001100103	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Skin Testing
0001000105	0001100103	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Journal/Daily Log
0001000106	0001100103	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Immunotherapy (allergy injections)
0001000107	0001100103	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Avoidance
0001100108	0001000101	0000000003	0000000002	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000108	0001100108	0000000001	0000000003	ME	TEXT	0000000000	01	ENG	00000	Diagnosis
0001000220	0001000108	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Intracutaneous One-to-Five Serial
Dilution Titration										
0001000221	0001000108	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Clinical Titration
0001000222	0001000108	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Functional Liver Detoxification
Profile										
0001000109	0001100108	0000000002	0000000003	ME	TEXT	0000000000	01	ENG	00000	Various Therapies
0001000223	0001000109	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Massage
0001000224	0001000109	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000225	0001000109	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Hydrotherapy
0001100110	0001000101	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000110	0000000001	0000000010	0000000008	ME	TEXT	0000000000	01	ENG	00000	Juvenile Allergies
0001000111	0001000110	0000000001	0000000001	ME	TEXT	0000000000	01	ENG	00000	EXPLORING THE ROOTS OF JUVENILE
ALLERGIES										
0900019563	0001000111	0000000001	0000000000	AMI	PHOTO	0000059076	30	ENG	00000	Allergy testing: Juvenile
0001000112	0001000110	0000000002	0000000001	ME	TEXT	0000000000	01	ENG	00000	MILK ALLERGY AND LACTOSE INTOLERANCE
0900019782	0001000112	0000000001	0000000000	AMI	PHOTO	0000011619	30	ENG	00000	Breast milk
0001000113	0001000110	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	SKIN ALLERGIES
0001000114	0001000110	0000000004	0000000001	ME	TEXT	0000000000	01	ENG	00000	ALLERGIC RHINITIS AND HAY FEVER
0900019564	0001000114	0000000001	0000000000	AMI	PHOTO	0000008520	30	ENG	00000	Hay fever: Juveniles
0001000115	0001000110	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	FOOD ALLERGY
0001100116	0001000110	0000000006	0000000001	ME	TEXT	0000000000	01	ENG	00000	Traditional Treatments
0001000116	0001100116	0000000001	0000000007	ME	TEXT	0000000000	01	ENG	00000	Medications
0001000226	0001000116	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Corticosteroid Nasal Sprays
0001000227	0001000116	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Nasal Corticosteroids
0001000228	0001000116	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Antihistamines
0001000229	0001000116	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Cromolyn Sodium Nasal Sprays
0001000230	0001000116	0000000005	0000000000	ME	TEXT	0000000000	01	ENG	00000	Hydrocortisone
0001000231	0001000116	0000000006	0000000000	ME	TEXT	0000000000	01	ENG	00000	Decongestants
0001000232	0001000116	0000000007	0000000000	ME	TEXT	0000000000	01	ENG	00000	Immunotherapy (Allergy Shots)

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0001100117	0001000110	0000000007	0000000003	ME	TEXT	0000000000	01	ENG	00000	Alternative Treatments
0001000117	0001100117	0000000001	0000000004	ME	TEXT	0000000000	01	ENG	00000	Herbal Treatments
0001000233	0001000117	0000000001	0000000000	ME	TEXT	0000000000	01	ENG	00000	Ginger
0001000234	0001000117	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Calendula (Pot Marigold)
0001000235	0001000117	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Comfrey
0001000236	0001000117	0000000004	0000000000	ME	TEXT	0000000000	01	ENG	00000	Burdock
0001000118	0001100117	0000000002	0000000000	ME	TEXT	0000000000	01	ENG	00000	Diet and Nutrition
0001000120	0001100117	0000000003	0000000000	ME	TEXT	0000000000	01	ENG	00000	Homeopathy
0001100237	0001000110	0000000008	0000000000	ME	TEXT	0000000000	01	ENG	00000	Combined Treatments
0001000237	0000000001	0000000011	0000000000	ME	TEXT	0000000000	01	ENG	00000	Appendix: Resources and Organizations
0001000121	0000000001	0000000012	0000000000	ME	TEXT	0000000000	01	ENG	00000	Glossary
0999999999	0000000001	0000000013	0000000000	MB	TEXT	0000000000	01	ENG	00000	Copyright and Use of Text and
Multimedia Content										
0999999998	4294967295	4294967295	4294967295	MB	TEXT	0000000000	01	ENG	00000	Overview

As shown in the above table, it is seen that the four articles named ARE YOU...., TRADITIONAL ..., ALTERNATIVE... and THE PHYSICIANS'... are represented in records (rows) 3 - 7 in the Tree Table which follows. All of these articles have the same parent (see parent field -- second column from left) namely the article whose ID (first column from the left) is 0001000001, i.e. the third article (name = Introduction). Indeed, the table of contents which corresponds to the above table (see Fig. 64) indicates that this is correct. Conversely, the third article's NUM_CHILD field indicates that the Introduction article has, indeed, 4 children.

Reference is now made to Figs. 65 and 66. Fig. 65 is a simplified block diagram illustration of the book creation tool 120 of Fig. 1. Fig. 66 is a simplified flowchart illustration of a preferred method of operation for the book compiler 112 of Fig. 65 also showing the inputs and outputs to that method. The outputs, in combination, typically form the digital book 100. Some tables, such as Tree and Viewdata tables 401 and 430 in the illustrated embodiment, are developed iteratively in the course of the process and therefore are shown as both inputs and outputs.

Fig. 66 is now described in detail.

The initial inputs to the method of Fig. 66 are attributes.txt file 914 (input to step 950), lib.txt file 916 (input to step 951) and fonts.txt file 915 (input to step 953). Files 914 - 916 are described herein in detail and are typically generated off-line, by keying in the appropriate information.

Raw Documents 180: Raw digital documents may be received in any of three possible conditions:

1. ASCII (uncoded and unformatted text).
2. SGML (coded but not formatted).
3. Standard Word processor (Formatted).

To facilitate the conversion to Master Document 906, a master document processing unit 902 is used which may perform the process described below which includes a filtering step.

Master Document Processing unit 902: Unit 902 preferably includes the following utilities A - Q:

A. 902.1 Create File List: Raw documents or books to be compiled come in as a single electronic, typically Word For Windows document, or as many such documents. This program creates a file called (PROJECT NAME).LST which contains the list of files that will be processed. An example of a PROJECT NAME.LST file is the following:

"a.doc"

"b.doc"
"c.doc"
"d.doc"
"e.doc"
"f.doc"

B. 902.2 Combine All Files: This utility combines a selected and ordered list of document files into one big file. For example, "Chaper1.txt", "Chaper2.txt", "Chaper3.txt", "Chaper4.txt", and "Chaper5.txt" get combined into one document and given a name like "book.doc". This utility is used when many electronic files are provided for a single book, or if the book is small and it comes with more than one file.

C. 902.3 SGML to RTF: This process creates an RTF document (Word for Windows-Rich Text Format) file based on an SGML document file. In some cases, documents arrive with proprietary codes. This program allows the proprietary codes to be visually seen and changed.

An example of SGML Input is as follows:

<GEODESC>Afghanistan</GEODESC>
<GEO><SUBJECT><FIELD>Location</FIELD>
<DATA>Southern Asia, north and west of Pakistan, east of Iran</DATA>
</SUBJECT>
<SUBJECT><FIELD>Geographic coordinates</FIELD>
<DATA>33 00 N, 65 00 E </DATA>

An example of RTF Output is as follows:

Afghanistan
Location Southern Asia, north and west of Pakistan, east of Iran
Geographic coordinates 33 00 N, 65 00 E

D. 902.4a Get Special Character: This process searches all document(s) listed in (PROJECT NAME).LST for

special non-keyboard characters that were coded. These characters can be standard European characters or the publisher's proprietary characters e.g. {Eumlat} might be replaced with E with two dots above it. This program produces a file with a list of codes that represent special characters. If the special character does not exist, then a font must be modified to contain the new character. The list of code representing special characters is placed in a file called CODES.INI.

An example of a Code Mapping File (which has not been mapped) is as follows:

Sample of file "codes.ini"

ă
ą
ć
Č
č
Đ
đ
ę
ě
ğ
ĭ
ı
Ł
ł
ń
ň
ŏ

E. 902.4b Map Special Char: This process allows the user to assign the font characters to special codes. For example, code {Euml} found in the electronic document may be replaced with an umlaut E(found in Arial font as the 203rd character). This code has an ASCII Value of 203 and is found in a font called Arial. Most electronic

documents contain proprietary codes. An example of a Code Mapping File is as follows, where column 1=code found, column 2= character value, column 3=font used. As shown, for example, in the second line of the table, special code "ą" was found to be the 41st character in a font called "VBRH".

ă	97	vbHAC
ą	41	VBRH
ć	99	vbACU
Č	82	vbOXRL
č	188	VBRH
Đ	208	Arial
đ	133	VBRH
ę	101	vbCD2
ě	55	VBRH
ğ	62	VBRH
ĭ	105	vbHAC
ı	74	vbOXRL
Ł	76	vb01
ł	108	vb01
ń	90	VBRH
ň	110	vbHAC
ŏ	165	VBRH

F. 902.4c Replace Special Characters: This process replaces coded text with special characters. After the map file is filled out, this program is run to replace the coded characters with what they actually look like, based on file CODES.INI.

G. 902.5 Copy Titles to Bold: This utility makes a copy of each of the high level titles in a document, and places the information on the first paragraph preceding that title. This is done because in the format described herein, the titles are slightly distant from the text, and the text may not display as a proper sentence. An

example of an article where titles were copied to the line below is as follows:

Before

AACHEN
(Fr. Aix-la-Chapelle), city, W central Germany, in North Rhine-Westphalia, near Belgium and the Netherlands. Aachen is known for its excellent mineral springs and has been a health resort since the 1st century AD. The city is an important railroad junction and industrial center.

After

AACHEN
AACHEN (Fr. Aix-la-Chapelle), city, W central Germany, in North Rhine-Westphalia, near Belgium and the Netherlands. Aachen is known for its excellent mineral springs and has been a health resort since the 1st century AD. The city is an important railroad junction and industrial center.

H. 902.6 Bold to Heading: This utility finds bold text that occurs at the beginning of a paragraph in a document, copies it, and makes it into a title. In many cases Hardcopy books display a title as bold text at the beginning of a paragraph. Boldface at the beginning of a sentence may sometimes indicates a subsection.

An example of an article where titles were created from bold text at the beginning of a paragraph is as follows:

Before

---

ea*gle noun 1 : a large bird of prey related to the hawks 2 : a score of two under par on a hole in golf

---

After

Eagle
ea*gle noun 1 : a large bird of prey related to the hawks 2 : a score of two under par on a hole in golf

---

The above example is an example of where it is desired to subdivide an article into more headings. Boldface at the beginning of a sentence usually indicates a subsection.

I. 902.7 Merge Repeat Titles: This utility combines two or more articles in a document if they share the same title.

J. 902.8 Auto Article ID: This utility gives each Article in a document a nine digit Article ID. The information pertaining to the article ID is stored in a database 903 called LINK.MDB. At this point, i.e. when every title has a unique Article ID, the document is officially a Master Document.

K. 902.9 Auto Hyperlink: Once the LINK.MDB database 903 created by utility 902.8) has been created in the Auto Article ID utility (902.8), Auto Hyperlinking can occur. In many cases the publisher signifies a reference to another title as a phrase in small caps, a phrase in bold, a phrase in italic or a phrase following an astrix. By marking these phrases (e.g., in Word, by making these phrases light green with Word for Window's edit replace feature), it is possible to quickly use what is assumed to be the publisher's references. This utility searches for the marked phrase (in this example light green text) in an electronic document, checks the database 903 to see if the marked text corresponds to a title, and if found, it creates a hyperlink. A hyperlink

is coded with the 9 digit id of the article that it corresponds to. in word for windows, it is displayed as double-underlined text followed by a hidden 9 digit ID corresponding to the article ID that the word or phrase is hyperlinked to.

Coded text(e.g. Light green text) followed by no hidden ARTICLE ID text signifies that the utility could not find any match, and the text remains unlinked. Preferably, the document is searched to see if any of the titles in the database occurs in the document, and if they do, they are hyperlinked.

L. 902.10 Manual Hyperlink: This utility allows a user to highlight a phrase in a Word for Windows document, press a button and hyperlink the phrase to any article in the database 903.

M. 902.11 Remove Hyperlink: This utility unlinks a hyperlink in a document, thereby to remove the special code signifying a hyperlink, and to remove the article ID from the phrase.

N. 902.12 Hyperlink Verifier: This utility verifies that all hyperlinks exist in a document.

O. 902.13 Goto Next Hyperlink: Many hyperlinks may be unresolved in the automatic process. This process allows the user to move the cursor EASILY and highlight the next potential or existing hyperlink in a document without knowing where it is in advance by pressing a button. This tool is able to bring the cursor to any non hyperlinked text that is coded and not already hyperlinked or any linked text which is coded and followed by an article id so that the user can edit/add/delete a hyperlink.

Many hyperlinks may be unresolved in the automatic process. This allows the user to find and highlight the next hyperlink easily and not search the document for it manually with an edit find

P. 902.14 Embed GIF: Insert a code in the Master

Document which denotes that a Publisher's Proprietary graphic is to be embedded in a specific location. The code refers to a filename (an electronic version of the graphic). These graphics are not in the media database because they only apply to a specific book, and are not shared. The code is {¦¦!EMBEDDED=<graphic file name>¦¦}. The code can occur between characters, at the beginning or end of a sentence.

Q. 902.15 Auto email/URL Link: Apply a code in the master document to an email address or URL (World Wide Web Location), so that it will be hyperlinked to that URL or email address.

Article Information Database 903: This database is filled during the "Insert article ID" stage of 902 and preferably contains the following fields:

a. Level Heading: level i.e. hierarchy of title

b. Parent ID: Heading Level 1. 9 digit ID in which this article (or sub-article belongs)

c. Article ID: 9 digit ID that belongs to this article

d. Title: The title of the article

e. Title Length: A number that signifies the Length of an article, typically defined as the number of characters in the article.

f. Typable Title: The title in characters that are typable on a standard English keyboard (non standard characters are the European character sets @Ahi, etc.)

g. Ignore: Boolean field on whether to ignore this title in an automatic hyperlink search (the title "A" would result in a large number of unwanted hyperlinks)

h. First Para: Text that can be found in the First paragraph of article

One of the outputs of the Master Document Process 902 is an outline of the book, which the master document generation process 902 passes to the Article

Information Database 903. The fields in this outline typically comprise: each article's unique ID number; Master Title, which is not necessarily unique; the article's heading level (H1, H2 etc.); the parent ID number for the article the section is a part of, and the first line of the article. The outline is used by the Media Linking Processor 904 and the Keyword and Subject Linking Processor 905, for adding the editorial enhancements to the book.

A typical outline is as follows:

Heading	Parent ID	ID	Title	First Line
H1	27000001	27000001	Preface	It is through the naming of objects, the telling of stories, and the singing of songs that we know ourselves and others. Whether trickster tales or nursery rhymes are the first things we remember hearing, we have learned how to live our lives by means
H1	27000002	27000002	Explanatory Notes	This book contains entries for authors, works, literary landmarks, literary and critical terms, mythological and folkloric figures, fictional characters, literary movements and prizes, and other miscellaneous matters. For the most part the presentation
H2	27000002	27000003	Entry names.	1. Boldface entry selection. In general, biographical entries are listed under the family name, when there is one. Exceptions to the family-name rule are pseudonyms, some non-English-language names, and subjects lacking family names or better known by
H2	27000002	27000004	Alphabetization	Alphabetization is letter-by-letter, not word-by-word. Thus belles lettres falls between Bellerophon and Bell for Adano. The order of entries is determined by ordinary rules of alphabetization applied to the boldface entry names and by the following
H2	27000002	27000005	Titles of works.	For ease of use, titles of works that are given individual treatment are usually entered at a conventional shortened form of the title, often a character's name (as Humphry Clinker), with the full title following in parentheses (in full The Expedition
H2	27000002	27000006	Cross-references.	Cross-references are indicated by small capitals. Because a one-volume work of

				this type affords the reader easy access to any entry, cross-references have been used sparingly-except for Wade-Giles transliterations of Chinese names (which in this book
H2	27000002	27000007	Dates in text.	In general, dates following the titles of works indicate the date of first publication. The date following mention of a foreign-language title is the year in which the book was first published in the original language. The dates following play titles
H2	27000002	27000008	Translations in text.	For non-English-language works, the date of publication is usually followed by a translation (if the title is not an obvious cognate or a proper name) in roman type. Translations that appear within quotation marks are approximate renderings.
H2	27000002	27000009	Etymologies.	Etymologies in this book are meant to provide historical and philological background for the terminology of literary studies. The book provides etymologies for common nouns, such as names of genres, verse forms, and movements, and for some proper nouns,
H2	27000002	27000010	Pronunciation.	This book provides pronunciation respellings for most entry words. All personal and geographical names are given phonetic transcriptions when they constitute an entry or occur in a title; respellings are given also for literary terms that appear in
H1	27000011	27000011	Guide to Pronunciation	The following paragraphs set out the value of the pronunciation symbols in English and other languages. Symbols which are not letters of the English alphabet are listed first. Sounds discussed in the following paragraphs are

				also rendered in symbols
H1	27000012	27000012	Pronunciation Symbols	For more information see Guide to
H1	1000001	1000001	Aakjfr	Aakjfr \(c)o-*ker\, Jeppe (b. Sept. 10, 1866, Aakjfr, Den.-d. April 22, 1930, Jenle) Poet and novelist, leading exponent of Danish regional literature and of the literature of social consciousness.
H1	1000002	1000002	Aaron	Aaron \(c)ar-@n\ (fl. c. 14th century BC) The traditional founder and head of the Jewish priesthood, who, with his brother Moses, led the Israelites out of Egypt. The figure of Aaron is built up from several sources of tradition. In the Talmud and Midrash
H1	1000003	1000003	Aaron's Rod	Aaron's Rod Novel by D.H. LAWRENCE, published in 1922. Lawrence constructed a parallel between the power that was miraculously manifested in the blossoming rod wielded by the biblical figure Aaron and the effect of the flute played by the protagonist of
H1	1000004	1000004	Abaddon	Abaddon \@-(c)bad-@n\ The angel of the bottomless pit, referred to in the Revelation to John. John Milton extended the meaning of the term to include the pit (i.e., the abyss of hell) itself in his poem Paradise Regained.
H1	1000005	1000005	AbasIyanIk	AbasIyanIk *ab-a-(c)s!-yan-!k\, Sait Faik (b. Nov. 23, 1906, AdapazarI, Ottoman Empire [now in Turkey]-d. May 11, 1954, Istanbul) Short-story writer, a major figure in modern Turkish literature.
H1	1000006	1000006	Abbaye group	Abbaye group \a-(c)ba\ A short-lived cooperative community of French writers and artists who promoted new works and who lived together in a house called

				L'Abbaye, in a Paris suburb, from 1906 to 1907. The group included the writers Charles Vildrac and
H1	1000007	1000007	Abbey	Abbey \(c)ab-e\, Edward (b. Jan. 29, 1927, Home, Pa., U.S.-d. March 14, 1989, Oracle, Ariz.) American writer whose works, set primarily in the southwestern United States, reflect an uncompromising environmentalist philosophy.
H1	1000008	1000008	Abbey Theatre	Abbey Theatre \(c)ab-e\ Dublin theater that was established in 1904. It grew out of the Irish Literary Theatre, founded in 1899 by William Butler YEATS and Isabella Augusta, Lady GREGORY, and was devoted to fostering Irish poetic drama. In 1902 the Irish
H1	1000009	1000009	Abbott	Abbott \(c)ab-@t\, Jacob (b. Nov. 14, 1803, Hallowell, Maine, U.S.-d. Oct. 31, 1879, Farmington, Maine) American clergyman, teacher, and writer, best known as a writer of children's books.
H1	1000010	1000010	Abdulhak Hamid Tarhan	Abdulhak Hamid Tarhan see TARHAN.
H1	1000011	1000011	Abdulla	Abdulla \ab-(c)d@l-@\, Muhammed Said (b. April 25, 1918, Zanzibar, Tanz.) Tanzanian novelist generally regarded as the father of Swahili popular literature.
H1	1000012	1000012	Abdullah bin Abdul Kadir	Abdullah bin Abdul Kadir \ab-(c)d@l-@-bin-(c)ab-d@l-(c)ka-dir\ (b. 1796, Malacca, Malaya-d. 1854, Jiddah, Turkish Arabia [now in Saudi Arabia]) Malayan writer who transformed Malay literature by the introduction of realism. He is considered to be the father
H1	1000013	1000013	abecedarius	abecedarius *a-be-se-(c)dar-e-@s\ [Late Latin, alphabetical, from the names of the letters a, b, c, d] A type of ACROSTIC in

				which the first letter of each line of a poem or the first letter of the first word of each stanza taken in order forms the
H1	1000014	1000014	Abe	Abe \(c)ab-a\ Kobo, byname of Abe Kimifusa (b. March 7, 1924, Tokyo, Japan-d. Jan. 22, 1993, Tokyo) Japanese novelist and playwright noted for his avant-garde techniques and his use of bizarre and allegorical situations to examine the isolation of the
H1	1000015	1000015	Abel	Abel \(c)a-b@l\ In the Old Testament, second son of Adam and Eve, who was slain by his older brother, CAIN (Genesis 4:1-16). According to Genesis, Abel, a shepherd, offered the Lord the firstborn of his flock. The Lord respected Abel's sacrifice but did
H1	1000016	1000016	Abelard	Abelard \a-ba-(c)lar, Angl (c)ab-@-*lard\, Peter, also called Pierre Abelard or Pierre Abailard, Latin Petrus Abaelardus or Petrus Abeilardus (b. 1079, Le Pallet, near Nantes, Brittany [now in France]-d. April 21, 1142, Priory of Saint-Marcel, near
H1	1000017	1000017	Abe Lincoln in Illinois	Abe Lincoln in Illinois \(c)ab-(c)li{nhookl}-k@n . . . *il-@-(c)noi, -(c)noiz\ Drama in 12 scenes by Robert E. SHERWOOD, produced in 1938 and published in 1939.
H1	1000018	1000018	Abell	Abell \(c)ab-@l, (c)ab-\, Kjeld (b. Aug. 25, 1901, Ribe, Den.-d. March 5, 1961, Copenhagen) Danish dramatist and social critic, best known outside Denmark for two plays, Melodien der blev vfk (1935; English adaptation, The Melody That Got Lost) and Anna
H1	1000019	1000019	Abenteuerroman	Abenteuerroman \(c)a-ben-*toi-@r-ro-*man\ [German, literally, adventure

				novel] German form of the PICARESQUE NOVEL. The Abenteuerroman is an entertaining story of the adventures of the hero, but there is also often a serious aspect to the story. An
H1	1000020	1000020	Abercrombie	Abercrombie \(c)ab-@r-*kr@m-be, in U.S. commonly -*kram-\, Lascelles \(c)las-@lz\ (b. Jan. 9, 1881, Ashton upon Mersey, Cheshire, Eng.-d. Oct. 27, 1938, London) Poet and critic associated with GEORGIAN POETRY.
H1	1000021	1000021	Abhijnanasakuntala	Abhijnanasakuntala \@-*bi-(c)gya-n@-(c)sha-kun-*t@l-@\ ("The Recognition of Sakuntala") Drama by KALIDASA composed about the 5th century AD that is generally considered to be the greatest Indian literary work of any period.
H1	1000022	1000022	Abish	Abish \(c)ab-ish\, Walter (b. Dec. 24, 1931, Vienna, Austria) American writer of experimental novels and short stories whose fiction took as its subject language itself.
H1	1000023	1000023	ab ovo	ab ovo \ab-(c)o-vo\ A Latin phrase meaning literally "from the egg" that alludes to the practice of beginning a poetic narrative at the earliest possible chronological point. The Latin poet and critic Horace notes approvingly (in Ars poetica) that Homer
H1	1000024	1000024	abozzo	abozzo \@-(c)bot-so\ [Italian] A rough sketch or draft (as of a poem).
H1	1000025	1000025	Abraham	Abraham \(c)a-br@-*ham\ or Avraham \(c)av-r@-*ham\, also called Abram \(c)a-br@m\ or Avram \(c)av-*ram\ (fl. early 2nd millennium BC) First of the Hebrew patriarchs and a figure revered by Judaism, Christianity, and Islam.

				According to the biblical book of
H1	1000026	1000026	Abraham	Abraham ben Meir ibn Ezra see Abraham ben Meir IBN EZRA.
H1	1000027	1000027	Abraham Lincoln: The War Years	Abraham Lincoln: The War Years \(c)a-br@-*ham-(c)li{nhookl}-k@n\ Four-volume biography by Carl SANDBURG, published in 1939. It was awarded the 1940 Pulitzer Prize for history.
H1	1000028	1000028	Abrahams	Abrahams \(c)a-br@-*hamz\, Peter (Henry) (b. March 19, 1919, Vrededorp, near Johannesburg, S.Af.) Expatriate South African writer noted for his eloquence in charting the complex issues of the nonwhites' struggle in his native land for a voice and for
H1	1000029	1000029	Abramov	Abramov *@-(c)bra-m@f\, Fyodor (Aleksandrovich) (b. Feb. 29, 1920, Verkola, Russian S.F.S.R., U.S.S.R.-d. May 14, 1983, Leningrad [St. Petersburg]) Russian writer, academic, and literary critic whose work focused on the difficulties and discrimination
H1	1000030	1000030	Abrams	Abrams \(c)a-br@mz\, M.H., in full Meyer Howard (b. July 23, 1912, Long Branch, N.J., U.S.) American literary critic known for his analysis of the Romantic period in English literature.
H1	1000031	1000031	Abrantes	Abrantes see JUNOT.
H1	1000032	1000032	abridged edition	abridged edition A version of a work that has been shortened or condensed by the omission of words, presumably without sacrifice of the principal meaning. When it is done for purposes of censorship, abridgment is known as bowdlerization (see BOWDLERIZE).
H1	1000033	1000033	Absalom	Absalom \(c)ab-s@-l@m\ (fl. c. 1020 BC, Palestine) Third and favorite son of David, king of Israel and Judah. The

				picture of Absalom presented in II Samuel 13-19 suggests that he was the Alcibiades of the Old Testament, alike in his personal
H1	1000034	1000034	Absalom, Absalom!	Absalom, Absalom! Novel by William FAULKNER, published in 1936.
H1	1000035	1000035	Absalom and Achitophel	Absalom and Achitophel \(c)ab-s@-l@m . . . @-(c)kit-@-*fel\ Verse satire by John DRYDEN published in 1681. The poem, which is written in heroic couplets, is about a contemporary episode in which anti-Catholics, notably the Earl of Shaftesbury, sought to bar
H1	1000036	1000036	Abse	Abse \(c)ab-ze\, Dannie (b. Sept. 22, 1923, Cardiff, Wales) British poet, playwright, essayist, and novelist, known for the characteristically Welsh voice and sensibility of his poetry.
H1	1000037	1000037	absolute	absolute \(c)ab-s@-*lut, *ab-s@-(c)lut\ Being self-sufficient and free of external references or relationships. In criticism, an absolutist believes that there are inviolable standards by which a work of art should be judged and that there are certain basic
H1	1000038	1000038	Absolute, Sir Anthony and Captain Jack	Absolute, Sir Anthony and Captain Jack \s@r-(c)anth-@-ne-*ab-s@-(c)lut . . . (c)kap-t@n-(c)jak\ Fictional characters, father and son protagonists of Richard Brinsley Sheridan's comic play THE RIVALS. Sir Anthony is a wealthy aristocrat whose son, Captain Jack,
H1	1000039	1000039	abstract	abstract \(c)ab-*strakt\ A summary of points (as of a written work) usually presented in skeletal form; also, something that summarizes or concentrates the essentials of a larger thing or several things.

H1	1000040	1000040	abstract poem	abstract poem Term coined by the English poet Edith Sitwell to describe a poem in which the words are chosen for their aural quality rather than specifically for their sense or meaning. An example from "Popular Song" in Sitwell's Facade
H1	1000041	1000041	absurdism	absurdism \@b-(c)s@r-*diz-@m, -(c)z@r-\ A philosophy based on the belief that humans exist in an irrational and meaningless universe and that the search for order brings one into conflict with that universe. See also THEATER OF THE ABSURD.
H1	1000042	1000042	Abu al-(Atahiyah	Abu al-(Atahiyah \a-(c)bul-a-(c)ta-he-y@, Arabic)a-(c)ta-\, original name Abu Ishaq Isma(il ibn al-Qasim ibn Suwayd ibn Kaysan (b. 748, al-Kufah or (Ayn at-Tamr, Iraq-d. 825/826, Baghdad) First Arab poet of note to break with the conventions established by
H1	1000043	1000043	Abu al-Faraj al-Isbahani	Abu al-Faraj al-Isbahani \a-(c)bul-fa-(c)razh-al-*is-ba-(c)ha-*ne\, in full Abu al-Faraj (Ali ibn al-Husayn al-Qurashi al-Isbahani, also called al-Isfahani \al-*is-fa-(c)ha-*ne\ (b. 897, Isfahan [Iran]-d. Nov. 20, 967, Baghdad, Iraq) Literary scholar who
H1	1000044	1000044	Abu al-Fida)	Abu al-Fida) \a-(c)bul-(c)fe-*da\, in full Abu al-Fida) Isma(il ibn (Ali al-Malik al-Mu)ayyad (Imad ad-Din, also called Abulfeda \a-(c)bul-(c)fe-da\ (b. Nov. 1273, Damascus [now in Syria]-d. Oct. 27, 1331, Hamah) Historian, geographer, and man of letters who
H1	1000045	1000045	Abu)l-Fadl (Allami	Abu)l-Fadl (Allami \a-(c)bul-(c)fad-@l-a-(c)la-*me, Arabic)a-(c)la-\, Abu)l-Fadl also spelled Abu-l-Fazl \a-(c)bul-(c)fap-@l\ (b. Jan. 14, 1551, Agra, India-

				d. Aug. 22, 1602) Historian, military commander, secretary, and theologian to the Mughal emperor Akbar.
H1	1000046	1000046	Abu Madi	Abu Madi \a-bu-(c)ma-de\, Iliya (b. c. 1889, al-Muhaydithah, Lebanon-d. Nov. 23, 1957, New York, N.Y., U.S.) Arab poet and journalist noted as one of the chief poets of the mahgar (Arab emigration to America).
H1	1000047	1000047	Abu Nuwas	Abu Nuwas \a-*bu-nu-(c)was\, also spelled Abu Nu)as \nu-(c)as\, in full Abu Nuwas al-Hasan ibn Hani) al-Hakami (b. c. 747-762, Ahvaz [Iran]-d. c. 813-815, Baghdad [now in Iraq]) Important poet of the early (Abbasid period (750-835).
H1	1000048	1000048	Abu Rishah	Abu Rishah \a-*bu-(c)re-sha\, (Umar (b. April 10, 1910, (Akko, Palestine [now in Israel]-d. July 15, 1990, Riyadh, Saudi Arabia) Syrian poet and diplomat who is noted for his early poetry, which broke with the traditions of Arab classicism.
H1	1000049	1000049	Abu Tammam	Abu Tammam \a-*bu-tam-(c)mam\, in full Abu Tammam Habib ibn Aws (b. 804, near Damascus [now in Syria]-d. c. 845, Mosul, Iraq) Poet and editor of an anthology of early Arabic poems known as the HAMASAH.
H1	1000050	1000050	abyss	abyss \@-(c)bis, a-; (c)ab-is\ [Greek abyssos, from abyssos (adjective) bottomless] The bottomless gulf, pit, or chaos of the old cosmogonies. The term can also have any of three specific meanings: 1. A confined subterranean body of water that according to
H1	1000051	1000051	academese	academese \@-*kad-@-(c)mez, -(c)mes; *ak-@d-@-\ A style of writing held to be characteristic of those in academic life. The term is generally pejorative,

				implying jargon-filled writing.
H1	1000052	1000052	academic	academic *ak-@-(c)dem-ik\ or academical \-mi-k@l\ Conforming to the traditions or rules of a school, as of literature or art, or an official academy. Conventional or formalistic.
H1	1000053	1000053	academic drama	academic drama Any play written and performed at schools and colleges in England in the early 16th century. See also SCHOOL DRAMA.
H1	1000054	1000054	Academie Francaise	Academie Francaise \a-ka-da-*me-fran-(c)sez\ French literary academy, established by the French first minister Cardinal de Richelieu in 1634 and incorporated in 1635, and existing, except for an interruption during the era of the French Revolution, to the
H1	1000055	1000055	academy	academy \@-(c)kad-@-me\ [Greek Akad{emacracute}meia, Akademia a public grove and gymnasium near Athens where Plato taught, a derivative of Akademos, a legendary Attic hero after whom the grove and gymnasium were named] A society of learned individuals
H1	1000056	1000056	acatalectic	acatalectic *a-*kat-@-(c)lek-tik\ [Greek akatalektos, literally, not stopping] In prosody, metrically complete (i.e., not falling short of the expected number of syllables in the last foot). It is the opposite of catalexis, the suppression or absence of
H1	1000057	1000057	Accademia della Crusca	Accademia della Crusca see CRUSCA ACADEMY.
H1	1000058	1000058	Accademia dell'Arcadia	Accademia dell'Arcadia see Academy of ARCADIA.
H1	1000059	1000059	accent	accent \(c)ak-*sent, -s@nt\ [Latin accentus variation in pitch, intonation, from ad to, toward + cantus song; a

				calque of Greek prosoidia] In prosody, rhythmically significant stress on the syllables of a verse, usually at regular intervals. The word
H1	1000060	1000060	Accent	Accent (in full Accent: A Quarterly of New Literature) Literary magazine published from 1940 to 1960 at the University of Illinois. Founded by Kerker Quinn and Charles Shattuck, the journal evolved from an earlier version called Direction that Quinn put
H1	1000061	1000061	accentual-syllabic verse	accentual-syllabic verse In prosody, the metrical system that is most commonly used in English poetry. It is based on both the number of stresses, or accents, and the number of syllables in each line of verse. A line of iambic pentameter verse, for
H1	1000062	1000062	accentual verse	accentual verse \ak-(c)sen-chu-w@l\ In prosody, a metrical system based only on the number of stresses or accented syllables in a line of verse. In accentual verse the total number of syllables in a line can vary as long as there are the prescribed number
H1	1000063	1000063	accismus	accismus \ak-(c)siz-m@s\ [Greek akkismos prudery, a derivative of akkizesthai to feign ignorance] A form of irony in which a person feigns indifference to, or pretends to refuse, something he or she desires. The fox's dismissal of the grapes in the Aesop
H1	1000064	1000064	Accius	Accius \(c)ak-she-@s\ or Attius \(c)at-e-@s\, Lucius (b. 170 BC, Pisaurum, Umbria [Italy]-d. c. 86 BC) One of the greatest of the Roman tragic poets, in the view of his contemporaries. His plays (more than 40 titles are known, and about

				700 lines survive)
H1	1000065	1000065	Account of My Hut, An	Account of My Hut, An Poetic diary by KAMO Chomei, written in Japanese in 1212 as Hojoki. It is admired as a classic literary and philosophical work.
H1	1000066	1000066	acephalous	acephalous *a-(c)sef-@-l@s, @-\ [Greek akephalos headless, from a- not + kephal{emacracute} head] see HEADLESS.
H1	1000067	1000067	Acestes	Acestes \@-(c)ses-tez\ In Greek mythology, legendary king of Segesta (Greek: Egesta) in Sicily. His mother, Egesta, had been sent from Troy by her parents to save her from being devoured by a sea serpent. Going to Sicily she met the river god Crimisus, by
H1	1000068	1000068	Acevedo Diaz	Acevedo Diaz *as-a-(c)ba-po-(c)pe-as\, Eduardo (b. April 20, 1851, Villa de la Union, Uruguay-d. June 18, 1924, Buenos Aires, Arg.) Writer and politician who is considered to be Uruguay's first novelist.
H1	1000069	1000069	Acharnians	Acharnians \@-(c)kar-ne-@nz\ (Greek Acharneis) Earliest of the extant comedies of ARISTOPHANES, produced in 425 BC. It is a forthright attack on the folly of war. Its farmer-hero, Dicaeopolis, is tired of the Peloponnesian War and therefore secures a
H1	1000070	1000070	Achebe	Achebe \a-(c)cha-ba\, Chinua, in full Albert Chinualumogu Achebe (b. Nov. 16, 1930, Ogidi, Nigeria) Prominent Igbo (Ibo) novelist acclaimed for his unsentimental depictions of the social and psychological disorientation accompanying the imposition of
H1	1000071	1000071	Acheron	Acheron \(c)ak-@-ran\ River in

				Thesprotia in Epirus, Greece, that was thought in ancient times to go to Hades because it flowed through dark gorges and went underground in several places; an oracle of the dead was located on its bank. In Greek mythology
H1	1000072	1000072	Achilles	Achilles \@-(c)kil-ez\ In Greek mythology, son of the mortal Peleus, king of the Myrmidons, and the Nereid Thetis. He was the bravest, handsomest, and greatest warrior of the army of Agamemnon in the Trojan War. One of the non-Homeric tales of his
H1	1000073	1000073	Achilles Tatius	Achilles Tatius \@-(c)kil-ez-(c)ta-she-@s\ (fl. 2nd century AD, Alexandria, Egypt) Teacher of rhetoric and author of Leucippe and Cleitophon, one of the Greek prose romances that influenced the development of the novel centuries later.
H1	1000074	1000074	Achitophel	Achitophel see ABSALOM AND ACHITOPHEL.
H1	1000075	1000075	Achterberg	Achterberg \(c)a{kinfmacr}-t@r-*ber{kinfmacr}\, Gerrit (b. May 20, 1905, Langbroek, Neth.-d. Jan. 17, 1962, Oud-Leusden) Dutch poet whose use of surreal language and imagery influenced a generation of poets known as the Experimentalists.
H1	1000076	1000076	Acis	Acis \(c)a-sis\ In the Greek mythology of Ovid, the son of Faunus (Pan) and the nymph Symaethis. Acis was a handsome shepherd of Sicily and the lover of the Nereid Galatea. His rival, Polyphemus the Cyclops, surprised them together and crushed Acis with a
H1	1000077	1000077	Acker	Acker \(c)ak-@r\, Kathy (b. 1948) American novelist whose writing style and subject matter reflect the so-called

				punk sensibility that emerged in youth culture in the 1970s.
H1	1000078	1000078	Ackerley	Ackerley \(c)ak-@r-le\, J.R., in full Joe Randolph (b. Nov. 4, 1896, Herne Hill, Kent, Eng.-d. June 4, 1967, Putney, near London) British novelist, dramatist, poet, and magazine editor known for his eccentricity.
H1	1000079	1000079	Ackerman	Ackerman \(c)ak-@r-m@n\, Diane, original surname Fink \(c)fi{nhookl}k\ (b. Oct. 7, 1948, Waukegan, Ill., U.S.) American writer whose works often reflected her interest in natural science.
H1	1000080	1000080	Ackermann	Ackermann \(c)ak-@r-*man\, Louise-Victorine, original surname Choquet \sho-(c)ka\ (b. Nov. 30, 1813, Paris, Fr.-d. Aug. 2, 1890, Nice) French poet who is best-known for her works of deep pessimism. Educated by her father in the philosophy of the
H1	1000081	1000081	Ackroyd	Ackroyd \(c)ak-*roid\, Peter (b. Oct. 5, 1949, London, Eng.) British novelist, critic, biographer, and scholar whose technically innovative novels presented an unconventional view of history.
H1	1000082	1000082	Acmeist	Acmeist \(c)ak-me-ist\, Russian Akmeist *@k-me-(c)est\, plural Akmeisty \-(c)es-te\ [Russian akmeist, from Greek akm{emacracute} highest point, acme] Member of a small group of early 20th-century Russian poets reacting against what they considered to be the
H1	1000083	1000083	Acontius	Acontius \@-(c)kan-she-@s, -sh@s\ In Greek legend, a beautiful youth of the island of Chios. During the festival of Artemis at Delos, Acontius saw and fell in love with Cydippe, a girl of a rich and noble family. He wrote on an apple the

				words "I swear to
H1	1000084	1000084	Acquainted with the Night	Acquainted with the Night Novel by Heinrich BOLL, published in German in 1953 as Und sagte kein einziges Wort ("And Said Not a Single Word").
H1	1000085	1000085	acronym	acronym \(c)ak-r@-*nim\ [Greek akros outermost, at the tip + onyma name] A word formed from the initial letter or letters of each of the successive parts or major parts of a compound term, such as RADAR from radio detecting and ranging or SONAR from sound
H1	1000086	1000086	acrostic	acrostic \@-(c)kros-tik\ [Greek akrostichis, from akros outermost + stichos line, verse] 1. Short verse composition, so constructed that one or more sets of letters (such as the initial, middle, or final letters of the lines), taken consecutively, form
H1	1000087	1000087	act	act \(c)akt\ [Latin actus, literally, action, activity] One of the principal divisions of a theatrical work.
H1	1000088	1000088	Actaeon	Actaeon \ak-(c)te-@n\ In Greek mythology, son of the god Aristaeus and Autonoe (daughter of Cadmus, the founder of Thebes in Boeotia); he was a Boeotian hero and hunter. According to Ovid's Metamorphoses, Actaeon accidentally saw the goddess Artemis while
H1	1000089	1000089	action	action \(c)ak-sh@n\ [translation of Greek praxis (in Aristotle's Poetics)] 1. A real or imaginary event or series of events forming the subject of a play, poem, or other composition. 2. The unfolding of the events of a drama or work of fiction, also
H1	1000090	1000090	Acuna	Acuna \a-(c)kun-ya\ Rosario de, surname

				in full Acuna y Villanueva de la Iglesia \e-*vel-ya-(c)nwa-va-pa-la-e-(c)glas-ya\, pseudonym Remigio Andres Delafon *pa-la-(c)fon\ (b. 1851, Madrid, Spain-d. 1923, Gijon) Spanish playwright, essayist, and short-story
H1	1000091	1000091	Ada	Ada (in full Ada; or, Ardor: A Family Chronicle) \(c)a-d@\ Novel by Vladimir NABOKOV, written in English and published in 1969. In its prodigious length and with the family tree on its frontispiece the book recalls the great 19th-century novels of the
H1	1000092	1000092	adab	adab \(c)a-dab\ [Arabic] Islamic concept that became a literary genre distinguished by its broad humanitarian concerns; it developed during the height of (Abbasid culture in the 9th century and continued to be of importance through the Muslim Middle Ages.
H1	1000093	1000093	adage	adage \(c)ad-ij\ [Latin adagium proverb] A saying, often in metaphorical form, that embodies a common observation, such as "If the shoe fits, wear it," "Out of the frying pan, into the fire," or "Early to bed, early to rise, makes a man healthy, wealthy,

The Keyword/Subject Linking Processor 905: Assigns keywords and subject categorization to each article. These keywords and subjects are used by the system of the present invention as search options. The processor typically comprises two utilities or tools: a keyword linking utility and a subject linking utility. Both of these tools are typically operative to:

a. Compare master titles of the book being processed to master titles from some or all of the other previously processed books and

b. Assign the same keywords and subjects to matching articles in the book currently being processed.

Any article that does not have a match in a previous book is assigned keywords and subjects as follows:

The Keyword/Subject linking processor 905 typically comprises a list of Master Keywords grouped by subject, e.g. literature keywords, science keywords, history keywords, general keywords. The first-line field of the outline is compared against the appropriate list(s) of keywords for that book. Every keyword, or alias for that keyword, that appears as part of the text in that first line becomes a keyword for that article. When the process is finished, a user is able to examine and refine the keyword assignments manually. The output of this process is a table created in article information database 903 with one record for every keyword assigned to every article. The fields in this table are Master Title ID; Title; and Keyword.

An example of such a table is as follows:

MTID	Title	Keyword
1000001	Aakjfr	poet
1000001	Aakjfr	novelist
1000001	Aakjfr	danish
1000002	Aaron	jewish
1000002	Aaron	moses
1000002	Aaron	israelite
1000002	Aaron	talmud
1000004	Abaddon	angel
1000004	Abaddon	poem
1000005	AbasIyanIk	writer
1000006	Abbaye group	french
1000006	Abbaye group	writer
1000006	Abbaye group	artist
1000007	Abbey	american
1000007	Abbey	writer
1000008	Abbey Theatre	dublin
1000008	Abbey Theatre	theater
1000008	Abbey Theatre	irish
1000008	Abbey Theatre	poet
1000008	Abbey Theatre	drama
1000009	Abbott	american
1000009	Abbott	clergyman
1000009	Abbott	writer
1000011	Abdulla	novelist
1000012	Abdullah bin Abdul Kadir	writer
1000012	Abdullah bin Abdul Kadir	realism
1000013	abecedarius	latin
1000013	abecedarius	poem
1000014	Abe	japanese
1000014	Abe	novelist
1000014	Abe	playwright
1000014	Abe	avant-garde
1000015	Abel	testament

1000016	Abelard	latin
1000017	Abe Lincoln in Illinois	drama
1000018	Abell	danish
1000018	Abell	dramatist
1000018	Abell	critic
1000018	Abell	english
1000019	Abenteuerroman	german
1000019	Abenteuerroman	hero
1000020	Abercrombie	poet
1000020	Abercrombie	critic
1000020	Abercrombie	poetry
1000021	Abhijnanasakuntala	drama
1000021	Abhijnanasakuntala	indian
1000022	Abish	american
1000022	Abish	writer
1000022	Abish	fiction
1000023	ab ovo	latin
1000023	ab ovo	poet
1000023	ab ovo	narrative
1000023	ab ovo	critic
1000024	abozzo	italian
1000024	abozzo	poem
1000025	Abraham	earl
1000025	Abraham	hebrew
1000025	Abraham	judaism
1000025	Abraham	christianity
1000027	Abraham Lincoln: The War Years	biography
1000027	Abraham Lincoln: The War Years	pulitzer prize
1000027	Abraham Lincoln: The War Years	history
1000028	Abrahams	african
1000028	Abrahams	writer
1000029	Abramov	russian
1000029	Abramov	writer
1000029	Abramov	critic
1000030	Abrams	american

1000030	Abrams	critic
1000030	Abrams	english
1000033	Absalom	king
1000033	Absalom	testament
1000035	Absalom and Achitophel	verse
1000035	Absalom and Achitophel	satire
1000035	Absalom and Achitophel	poem
1000035	Absalom and Achitophel	hero
1000035	Absalom and Achitophel	earl
1000036	Abse	british
1000036	Abse	poet
1000036	Abse	playwright
1000036	Abse	essay
1000036	Abse	novelist
1000036	Abse	welsh
1000036	Abse	poetry
1000037	absolute	criticism
1000037	absolute	art
1000038	Absolute, Sir Anthony and Captain Jack	fiction
1000038	Absolute, Sir Anthony and Captain Jack	character

The Keyword/Subject linking processor 905 also contains a subject categorization structure. Each subject has a permanent subject ID that is used across books. The processor allows a user to assign groups of articles to a particular subject based on keywords the user tells the processor to look for in the articles. The user may also assign individual articles to a specific subject. The output of this process is a table in database 903 with one record for each article assigned to a subject. The fields in this table are Master Title ID; and subject ID. An example of such a table is as follows:

MasterTitleID	TopicID
1000001	999013001
1000001	999013001
1000003	999013003
1000003	999013003
1000004	999013001
1000008	999013001
1000008	999015003
1000011	999013001
1000013	999013001
1000014	999013001
1000015	999019002
1000017	999013003
1000018	999015003
1000020	999013001
1000023	999013001
1000024	999013001
1000033	999019002
1000033	999019002
1000034	999013003
1000034	999013003
1000035	999013001
1000035	999013003
1000036	999013001
1000036	999013001
1000036	999013001
1000036	999013001
1000040	999013001
1000040	999013002
1000041	999015003
1000042	999013001
1000046	999013001
1000046	999008003
1000047	999013001

1000048	999013001
1000049	999013001
1000060	999008003
1000061	999013001
1000064	999013001
1000065	999013001
1000067	999013004
1000068	999013001
1000070	999013001
1000071	999013004
1000072	999013004

The Media Linking Processor 904: The Media Linking Processor 904 is used to create the correlation between specific articles or paragraphs of text and specific pieces of media. The media itself is stored in the Media Database 170. The Media Database 170 contains a table with information about each of the pieces of media available for connecting to a digital book. The fields in this table typically comprise the following:

a. VBID, a unique ID number for every piece of media in media database 170;

b. mediaId, which links the media back to a master media database which may, for example, include all media in media database 170 and more;

c. default caption;

d. default title;

c. category; and

f. media type, which identifies a multimedia item as a photo, sound element, animation, map, or video.

Similar to the Keyword/Subject Linking Processor 905, the Media Linking Processor 904 uses the outline in the Article Information Database 903 to compare master titles of the book being processed to master titles from some or all of the other previously processed books, and assign the same media from the Media Database 170 to matching articles in the new book. A user can also search media database 170 by keywords, captions, or individual master titles to find appropriate media items and link them to specific articles.

The output of media linking processor 904 is a table in article information database 903 with one record for every piece of media to be included in that book. The fields in this table typically comprise the following:

a. BookId, which identifies the current book;

b. M2Mid, which is a unique number assigned to the link between the specific media item and the specific

paragraph or article;

c. MasterTitleId, which is the same idnumber from the outline in database 903;

d. VBID, which is the ID that identifies that piece of media in Lib.txt 916;

e. Caption, which is the caption which will appear in the digital book as the caption for that piece of media in this book;

f. Title, which is to appear with the media item in the user's browser (not shown).

g. Paragraph, which indicates which paragraph of the article the media item should be embedded in;

h. Mediatype; which indicates if the media item is a photo, sound element, video, animation, map or other media item;

i. Soundphoto: for those media types which are sounds, the ID from lib.txt 916 of the photo that will appear in the digital book with that sound.

An Example of the above type of Media table is as follows:

bookversionid	m2mid	mastertitleid	vbid	caption	title	paragraph	mediatype	soundphoto
29	51969	23000031	22912	Mika Waltari (1908-1979), author of <I>The Wanderer</I>	Waltari, Mika	1	Photo	
29	51970	22000073	22928	Paul Verlaine (1844-1896), French poet	Verlaine, Paul	1	Photo	
29	51971	19000361	22938	Mikhail Sholokhov (1905-1984), Russian writer who won the Nobel Prize for literature	Sholokhov, Mikhail	1	Photo	
29	51972	2000453	23865	Robert Bly (1926-), American poet	Bly, Robert	1	Photo	
29	51973	2000517	23927	Jorge Luis Borges (1899-1986), Argentinian writer	Borges, Jorge Luis	1	Photo	
29	51974	1000347	24687	Israeli poet Yehuda Amichai (1924-)	Amichai, Yehuda	1	Photo	
29	51975	1000354	24689	Martin Amis (1949-), British comic novelist	Amis, Martin	1	Photo	

29	51976	2000249	24753	Saul Bellow (1915-), American novelist	Bellow, Saul	1	Photo	
29	51977	1000324	47261	Writer Jorge Amado (1912-) at home in Bahia, Brazil	Amado, Jorge	1	Photo	
29	51980	13000266	71617	American novelist Peter Matthiessen (1927-) photographed on San Pedro Martir Island	Matthiessen, Peter	1	Photo	
29	51981	13000275	71620	Armistead Maupin (1944-), American novelist	Maupin, Armistead	1	Photo	
29	51982	10000029	71871	Tove Janson (1914-), Finnish writer-illustrator of children's books	Jansson, Tove	1	Photo	
29	51983	11000002	71936	Ismail Kadare (1936-), Albanian writer	Kadare, Ismail	1	Photo	
29	51984	16000141	72055	Octavio Paz (1914-), Mexican poet, essayist, and Nobel laureate	Paz, Octavio	1	Photo	
29	51985	6000351	72096	Carlos Fuentes (1928-), Mexican	Fuentes, Carlos	1	Photo	

				novelist, short-story writer, playwright, critic, and diplomat				
29	51986	7000293	72102	Edward Gorey (1925-), American author and artist	Gorey, Edward	1	Photo	
29	51987	15000002	72162	Joyce Carol Oates (1938-), American novelist	Oates, Joyce Carol	1	Photo	
29	51988	16000463	73419	Anthony Powell (1905-), English novelist, biographer and literary critic	Powell, Anthony	1	Photo	
29	51989	3000467	76968	James Clavell (1924-1994), author of action novels	Clavell, James	1	Photo	
29	51991	6000041	77302	Nuruddin Farah (1945-), refugee novelist from Somalia	Farah, Nuruddin	1	Photo	
29	51992	6000293	77370	Dick Francis (1920-), English mystery author	Francis, Dick	1	Photo	
29	51993	8000223	77491	Joseph Heller (1923-), American writer	Heller, Joseph	1	Photo	
29	51739	23000276	148	Richard Wright	Wright,	1	Photo	

				(1908-1960), African-American author of <I>Native Son</I>	Richard			
29	51995	11000212	79414	Jerzy Kosinski (1933-1991), author with Arthur Miller	Kosinski, Jerzy	1	Photo	
29	51740	5000094	177	Ralph Ellison (1914-1994), African-American writer and educator, famous for his novel, <I>Invisible Man</I>	Ellison, Ralph	1	Photo	
29	51742	2000683	187	British poet William Browne (1591?-1645?)	Browne, William	1	Photo	
29	51743	2000158	201	Katharine Lee Bates (1859-1929), author of the patriotic poem "America the Beautiful"	Bates, Katharine Lee	1	Photo	
29	51999	2000046	127660	Russell Baker (1925-), American newspaper columnist	Russell Baker	1	Photo	
29	51744	1000230	312	Edward Albee	Albee,	1	Photo	

				(1928-), American playwright and recipient of the Pulitzer Prize	Edward			
29	52000	7000254	127821	Irish dramatist and poet Oliver Goldsmith (1730-1774)	Goldsmith, Oliver	1	Photo	
29	51745	3000322	315	John Cheever (1912-1982), Pulitzer Prize-winning American short-story writer and novelist	Cheever, John	1	Photo	
29	51746	2000570	316	Ray Bradbury (1920-), American writer of classic science-fiction and fantasy	Bradbury, Ray	1	Photo	
29	51747	1000662	317	Isaac Asimov (1920-1992), prolific science-fiction writer	Asimov, Isaac	1	Photo	
29	51748	13000080	319	Norman Mailer (1923-), American writer and Pulitzer Prize winner	Mailer, Norman	1	Photo	
29	51749	23000316	327	William Butler Yeats (1865-1939), Irish poet and	Yeats, William Butler	1	Photo	

				dramatist				
29	51750	14000003	345	Vladimir Nabokov (1899-1977), Russian-American novelist, poet, and critic	Nabokov, Vladimir	1	Photo	
29	51751	13000030	346	Portrait of Niccolo Machiavelli (1469-1527), Italian historian, statesman, and political philosopher	Machiavelli, Niccolo	1	Photo	
29	51752	10000149	352	James Joyce (1882-1941), Irish novelist, author of the epic novel <I>Ulysses</I>	Joyce, James	1	Photo	
29	51753	9000024	354	Henrik Ibsen (1828-1906), Norwegian playwright known as the father of modern drama	Ibsen, Henrik	1	Photo	
29	51754	8000544	355	Aldous Huxley (1894-1963), English writer, author of <I>Brave New World</I>	Huxley, Aldous	1	Photo	
29	51755	8000514	356	Victor Hugo	Hugo,	1	Photo	

				(1802-1885), French poet, author of <I>Les Misirables</I> (1862)	Victor			
29	51756	5000111	365	Ralph Waldo Emerson (1803-1882), American poet	Emerson, Ralph Waldo	1	Photo	
29	51758	3000324	373	Anton Chekhov (1860-1904), Russian dramatist and short-story writer	Chekhov, Anton	1	Photo	
29	51761	2000458	379	Giovanni Boccaccio (1313-1375), Italian writer and humanist	Boccaccio, Giovanni	1	Photo	
29	51762	1000739	385	Jane Austen (1775-1817), classic English author of <I>Sense and Sensibility</I>	Austen, Jane	1	Photo	
29	51763	1000249	386	Louisa May Alcott (1832-1888), American writer best known as the author of <I>Little Women</I>	Alcott, Louisa May	1	Photo	

29	51764	1000169	387	James Agee (1909-1955), American poet, novelist, film critic, and screenwriter	Agee, James	1	Photo	
29	51765	19000428	388	Upton Sinclair (1878-1968), American writer, and social and economic reformer	Sinclair, Upton	1	Photo	
29	51766	8000107	2301	Moss Hart (1904-1961), American playwright, stage director, and Pulitzer Prize winner	Hart, Moss	1	Photo	
29	51767	8000225	2303	American writer Lillian Hellman (1905-1984)	Hellman, Lillian	1	Photo	
29	51768	16000326	2310	Harold Pinter (1930-), playwright who wrote the screenplay for <I>The French Lieutenant's Woman</I> (1981	Pinter, Harold	1	Photo	
29	51769	12000190	2328	Gotthold Ephraim Lessing (1729-	Lessing, Gotthol	1	Photo	

				1781), German dramatist and critic	d Ephraim			
29	51770	13000251	2329	Philip Massinger (1583-1640), English playwright	Massinger, Philip	1	Photo	
29	51771	11000165	2330	Poet Friedrich Gottlieb Klopstock (1724-1803)	Klopstock, Friedrich Gottlieb	1	Photo	
29	51773	4000036	2332	Gabriele D'Annunzio (1863-1938), Italian novelist, poet, and playwright	D'Annunzio, Gabriele	1	Photo	
29	51774	2000226	2333	Aphra Behn (1640-1689), English novelist and dramatist	Behn, Aphra	1	Photo	
29	51777	23000284	2340	English dramatist William Wycherley (1640-1716)	Wycherley, William	1	Photo	
29	51778	22000020	2341	Sir John Vanbrugh (1664-1726), British dramatist	Vanbrugh, Sir John	1	Photo	
29	51779	7000398	2343	Franz	Grillpar	1	Photo	

				Grillparzer (1791-1872), Austrian playwright	zer, Franz			
29	51780	19000335	2348	Richard Sheridan (1751-1816), British dramatist	Sherida n, Richard	1	Photo	
29	51781	18000334	2375	Edmond Rostand (1868-1918), French dramatist	Rostan d, Edmon d	1	Photo	
29	51783	1000468	2385	Jean Anouilh (1910-1987), French playwright	Anouil h, Jean	1	Photo	
29	51784	2000255	2390	Robert Benchley (1889-1945), American humorist, editor, and actor	Benchl ey, Robert	1	Photo	
29	51786	2000294	2540	Prof. Henri Bergson (1859-1941), philosopher, and winner of the 1927 Nobel Peace Prize	Bergso n, Henri	1	Photo	
29	51789	19000652	2596	Gertrude Stein (1874-1946), American writer	Stein, Gertrud e	1	Photo	
29	51790	21000051	2597	John Updike (1932-), American writer	Updike, John	1	Photo	

				and Pulitzer Prize winner				
29	51791	23000402	2682	Author Carl Zuckmayer (1896-1977), at the International Book Fair in Frankfurt, Germany, ,1966	Zuckmayer, Carl	1	Photo	
29	51795	3000265	3807	Raymond Chandler (1888-1959), author of mystery novels featuring detective Philip Marlowe	Chandler, Raymond	1	Photo	
29	51796	3000286	3815	American writer John Jay Chapman (1862-1933)	Chapman, John Jay	1	Photo	
29	51797	19000069	3961	Pulitzer Prize-winning poet Carl Sandburg (1878-1967)	Sandburg, Carl	1	Photo	
29	51798	10000163	3970	Swiss psychologist and psychiatrist Carl Gustav Jung (1875-1961), 1922	Jung, Carl	1	Photo	
29	51800	20000226	4075	James Thurber (1894-1961), American cartoonist and author	Thurber, James	1	Photo	

29	51801	19000653	4086	John Steinbeck (1902-1968), whose <I>The Grapes of Wrath</I> won the Pulitzer Prize for fiction in 1940	Steinbeck, John	1	Photo	
29	51803	19000329	4104	English poet Percy Bysshe Shelley (1792-1822)	Shelley, Percy Bysshe	1	Photo	
29	51804	6000273	4152	Michel Foucault (1926-1984), French philosopher and historian, c. 1979	Foucault, Michel	1	Photo	
29	51806	8000142	4164	Nathaniel Hawthorne (1804-1864), American writer; painting by Emanuel Leutze	Hawthorne, Nathaniel	1	Photo	
29	51808	3000220	4189	St. Cecilia (d. 230?), Christian martyr	Cecilia, St.	1	Photo	
29	51809	14000020	4347	Fridtjof Nansen (1861-1930), Norwegian Arctic explorer and Nobel laureate	Nansen, Fridtjof	1	Photo	
29	51810	6000346	4445	Robert Frost	Frost,	1	Photo	

				(1874-1963), American poet	Robert			
29	51811	4000419	4529	Public humiliation of Alfred Dreyfus; Dreyfus stripped of rank and sword after conviction of treason.	Dreyfus, Alfred	1	Photo	
29	51813	23000394	4657	Emile Zola (1840-1902), French novelist	Zola, Emile	1	Photo	
29	51815	7000232	4712	Johann Wolfgang von Goethe (1749-1832), German poet, dramatist, novelist, and scientist	Goethe, Johann Wolfgang von	1	Photo	
29	51817	6000231	4912	German author and journalist Theodor Fontane (1819-1898)	Fontane, Theodor	1	Photo	
29	51818	19000151	4915	Arthur Schnitzler (1862-1931), Austrian physician, dramatist, and novelist	Schnitzler, Arthur	1	Photo	
29	51819	13000666	4928	Wilhelm Muller (1794-1827), German poet	Muller, Wilhelm	1	Photo	

The three output tables from processors 904 and 905 are stored in database 903 and they are read and processed by the Book Tree Processor 909 as part of the book compilation process.

Master Document 906: The Master Document format is similar but not identical to RTF Winhelp Format which has been available for many years, and was used to create online Window's Help. The format preferably comprises the following:

a. Hierarchy Structure. "Heading 1" through "Heading 6" (Chapters, Subchapters, etc.)

b. Hyperlinks. Making a 2 dimensional linear document into a 3 dimensional dynamic document.

c. Article ID. Each article has a unique 9 digit ID that allows a solitary reference even if article titles are the same. A hyperlink to "Mars" will go to the planet Mars as opposed to the God Mars based on content of article.

d. Paragraph & Character Styles. In order to adhere to the original tagging structure, paragraph & character styles are used for items such as "Names", "Keywords", "Dates", etc. These styles will allow us to create more detailed Versabook Documents when the Versa-book engine and local browsers are able to support more complex languages than HTML (XML for example).

e. Tables and Media. Standard tables and book media

Master HTML Creator 907: Using Word for Windows HTML Filter along with a VBA Application, this program creates Master HTML files 908 (typically, one file 908 per article entry in the tree). The VBA application is used in conjunction with the filter because the filter cannot handle large files with producing errors. The VBA application typically chops up these large files and sends them to the filter. The VBA application also codes

the hyperlinks with a precoded "vb:". Examples are provided below in the context of the description of Master HTML Articles 908.

Master HTML Documents 908: These are similar to HTML format except that Titles are stored as <H1><A NAME="001000001">Title1</H1> and Hyperlinks are stored as <A HREF="vb:002000125">Title2</A>.

Book Tree Processor 909: This process opens up each Master HTML 908 and queries the database 903 for any media, keywords or subjects associated with each article. The process then outputs a file 911 for every article and sub-article with the article ID (followed by a ".txt") as the file name. There is a mini HTML article 911 for every article. This mini HTML article includes the keyword and subject information. This process also generates a large tree.txt file 910 which typically comprises the following information: Hierarchy level, articleID, title of article, and any media associated to that article.

Book Compiler 912: The book compiler 912 preferably performs processes 950 to 957 which are now described in detail.

Compile attributes table process 950 -

Compiles attributes.txt file 914 and translates the contents into the attributes table 427 creating one record for each line in the attributes.txt file. The name is used to fill the name 428 in the table and the value 429 is read from the last field or the indicated file as appropriate

Compile libentry table process 951 - Compiles lib.txt file 914 and translates the contents into the libentry table 485 creating one record. The TEMPNAME 487 is read from the first field, ISBN 488 is read from the second, NAME 486 from the third and BOOKTYPE 489 from the fourth and final field.

Compile tree/viewdata table process 952 - The

tree.txt 910 and Mini HTML Articles 911 are now used to fill the tree table 401 and Viewdata Table 430. The filling of tables 401 and 430 preferably includes the following steps (a) to (o):

(a) The level is read. The first item in the tree.txt 910 should always have a level of 0 and is the root of the book. The Parent ID 405 is set to 0 and the child number 406 is set to 1. Subsequent items fall into one of the following categories:

i) same level as previous record- parent ID 405 is same as previous item, child number 406 is one more then previous record

ii) one level more then previous record- parent ID 405 is ID 402 of previous item, child number 406 is one

iii) one level less then previous record- parent ID 405 is same as previous item of same level, child number 406 is one more then previous record of same level, number of children 407 for previous record of same level is set to child number 406 of last child of that record.

Finally, the number of children 407 is filled in for the last record at each level.

(b) The media object ID 402 is read and put into the table. The first item should always have an ID of 1.

(c) The Media Object Type is read and put into the table as MOTYPE 408.

(d) Media Type is read and put into the table as MEDIATYP 409.

(e) Source is read. If the source is MediaDB then the contents of the Filename field are put into Viewdata field 432 and the Location field 436 is set to table. If the source is Book then the file path in Filename is used and the contents of that file are read. If the content size is greater then 200 Kilobytes a file is

created to store the contents, the filename is put into Viewdata field 432 and the Location field 436 is set to File.

(f) Media Format is read and put into Format field 435.

(g) Source2 is read. If the source is MediaDB then the contents of the Filename2 field are put into Viewdata2 field 437 and the Location2 field 439 is set to table. If the source is Book then the file path in Filename2 is used and the contents of that file are read. If the content size is greater then 200 Kilobytes a file is created to store the contents, the filename is put into Viewdata2 field 437 and the Location2 field 439 is set to File.

(h) Media Format2 is read and put into Format2 field 438.

(i) Caption File is read and put into Caption field 433.

(j) Hotspot File is read and put into Hotspot field 434.

(k) Paragraph Number is read and put into PARAGRPHNO field 412.

(l) Heading Level is read and put into HTMLLEVEL field 413.

(m) Language is read and put into LANG field 414.

(n) Version is read and put into VERSION field 415.

(o) Name is read and put into NAME field 404.

Get Fonts Process 953 - Font files named in Fonts.txt 915 are copied to a directory called Fonts in the destination directory for the book

Add Reference/Embed Lists Process 954 - For each article in the book look for any embedded Media Data Objects 504. For each Media Data Object 504 that is embedded add the ID field 402 of the current Media Data

Object to its Embed List 416. For each article in the book look for any hyperlinks to other Media Data Objects 504. For each Media Data Object 504 that is hyperlinked to, add the ID 402 of the current Media Data Object to its Reference List 417.

Compile Query Database Process 955 - Create the query database 604 as required by the standard commercially available query system (such as Verity) being used.

Compile Query Result Tables Process 956 - For each query type being used of type Query String, Query Hierarchical ID or Query ID go through each article in the book and read the values for which this article will respond. If the item does not appear in the corresponding Query Result Table for that query then add it and set the Count 426, 444, 492 to 1 otherwise increment the count.

Fill Sort Name Process 957 - For each article in the tree table 401 read the name 404, remove any HTML encoding, remove all punctuation, put in lowercase, replace accented characters with non-accented equivalents and write to the NAMESORT 403 field

Tree File 910: Also termed herein "Outline tree.txt".

Preferably the tree file 910 has the following format:

One entry per line, each such entry preferably comprising the following items:

<level>¦ <media object id>¦ <media object type>¦ <media type>¦ <source>¦ <media format>¦
<filename>¦ <source2>¦ <media format2>¦ <filename2>¦ <caption-file>¦ <hotspot-file>¦
<paragraph-number>¦ <Heading Level>¦ <language>¦ <version>¦ <name>

The above parameters are now interpreted:

a. Level: The level in the hierarchy.

b. Media Object Id: Unique ID 402 identifies media object (1 is reserved for the root of the book).
c. Media Object Type: Structural component in book (values are: MC 201, ME 202, MB 203 , MG 204, AMI 205 or EMBEDDED (media only viewed embedded in an article)).
d. Media Type: Media type as seen by user (values are: ANIMATION, FLAG, MAP, SLIDESHOW, MUSIC, PHOTO, SPEECH, VIDEO, TEXT, NA).
e. Source: Indication of where the data comes (values are: MediaDB (from media database 170), Book (if it is specific to the book 100), and NA (if there is no viewable data for the entry).
f. Media Format: Storage format used for media if it is not from the media database (values are: GIF, JPG, AVI, SWF, MPGI, MPGII, WAV, and HTML).
g. Filename: The name of the file containing the viewable data for the media object. The name of the file is relative to the book directory where all the files for the book are stored. If the media object is from the media database 170 then this field contains the media database ID 460 for the object in the media database.
g. Source2: Supplementary viewable data information - indication of where the data comes (values are: MediaDB (from media database 170), Book (if it is specific to the book 100), and NA (if there is no viewable data for the entry).
h. Media Format2: Supplementary viewable data information - Storage format used for media if it is not from the media database (values are: GIF, JPG, AVI, SWF, MPGI, MPGII, WAV, and HTML).
i. Filename2: Supplementary viewable data information - the name of the file containing the viewable data for the media data object. The name of the file is relative to the book directory where all the files for the book are stored. If the media object is from the media database 170 then this field contains the media database ID 460

for the object in the media database.
j. Caption File: The file containing the caption for the media data object.
k. Hotspot File: The file containing the hotspots for the media data object.
l. Paragraph Number: The paragraph of parent at which an AMI 205 is to be embedded.
m. Heading Level: Level of heading for display in article (1-6, if zero the heading is not displayed in the article).
n. Language: language of text/narration (valid values: English).
o. Version: integer indicating version for entry.
p. Name: Name of Media Data Object in HTML format.

Mini HTML Articles 911:

```
<!query_internal_name=data1;data2>
<!!>
<P>Blah blah blah</P>
<P>Blah blah blah</P>
<P>Blah blah blah</P>
```

The Mini HTML Articles 911 have two sections divided by a marker of the form "<!!>".

The first section contains the data for the query system 604. For each defined query type which returns the article for one or more values, there is typically an entry starting with "<!" followed by the internal name 447 of the query, followed by a "=", followed by a list of the values for the article separated by a ";" and ending with a ">". Values are either names 424 or IDs 421, 468, depending on the query implementation type 448.

The second section of the article in HTML and is the displayable text for the article. Captions are

similarly formatted to allow searching of media types that are not text such as jpegs, mpegs, gifs, shockwave flash etc.

Attribute.txt 914: A file used to fill the Attributes Table 427. Each line in the file is used to fill one record in the table. Each line is of the following form:

<attribute-name>¦ <location>¦ <data>

The parameters are now described:

a. attribute name - this is the name 426 of the attribute.

b. location - this indicates if the value 427 for the attribute. is contained in the following field, in which case location is "field" or in a separate input file whose path is stored in the following field in which case the location is "file".

c. data - if location is "field" then this field is the value 427 for the attribute, if location is "field" then this is the path to the file that stores the value 427 for the attribute.

Fonts.txt 915: This file is used to indicate the fonts that should be included with the book. One font is on each name. The name of the font file is listed.

Lib.txt 916: This file is used to fill in the library entry table 485. This file and table have one line and record respectively. The line is of the following form:

<template-name>¦ <ISBN>¦ <title>¦ <book-type>

The parameters are now described:

a. template-name - the name 487 of the template 608 for the book

b. ISBN - the International Standard Book Number (ISBN) 488 used to uniquely identify books
c. title - the name 486 of the book
d. book-type - value 489 indicating the implementation method for the book, currently there is only one implementation for a book.

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It is appreciated that the software components of the present invention may, if desired, be implemented in ROM (read-only memory) form. The software components may, generally, be implemented in hardware, if desired, using conventional techniques.

It is appreciated that the particular embodiment described in the Appendices is intended only to provide an extremely detailed disclosure of the present invention and is not intended to be limiting.

It is appreciated that various features of the invention which are, for clarity, described in the contexts of separate embodiments may also be provided in combination in a single embodiment. Conversely, various features of the invention which are, for brevity, described in the context of a single embodiment may also be provided separately or in any suitable subcombination.

It will be appreciated by persons skilled in the art that the present invention is not limited to what has been particularly shown and described hereinabove. Rather, the scope of the present invention is defined only by the claims that follow:

CLAIMS

1. An electronic library system comprising:

an electronic bookstore storing a multiplicity of electronic books; and

a plurality of personal electronic libraries associated with a corresponding plurality of workstations, each individual personal electronic library comprising:

a library builder operative to download selected ones from among the multiplicity of electronic books in the electronic bookstore into the individual personal electronic library; and

a library research engine operative to search a plurality of books in the individual personal electronic library.

2. A system according to claim 1 wherein the library research engine is operative to search all books in the individual personal electronic library in a single search operation.

3. A system according to claim 1 wherein the library research engine is operative to accept a user's definition of a subset of books in the user's personal electronic library and to search only the subset of books.

4. An electronic information reservoir comprising:

a multiplicity of books each of which is stored as a separate object; and

a research engine including:

a book searcher operative to search individual ones of the multiplicity of books and to generate a book search output; and

a booksearch merger operative to merge

book search outputs of a plurality of searches performed by the book searcher on a plurality of user-selected books from among the multiplicity of books, thereby to generate a global search output.

5. An electronic library system comprising:

an electronic bookstore storing a multiplicity of electronic books; and

a plurality of personal electronic libraries associated with a corresponding plurality of workstations, each individual personal electronic library comprising:

a library builder operative to download selected ones from among the multiplicity of electronic books in the electronic bookstore into the individual personal electronic library; and

a book updater operative to perform an automatic background update of at least a portion of at least one electronic book in the individual personal electronic library which has become outdated.

6. A system according to claim 5 wherein each electronic book is organized as a hierarchy of book portions each comprising a meaningful portion of the contents of an electronic book and wherein the book updater, when updating an electronic book, is operative to update only those portions of the electronic book which have become outdated.

7. A system according to claim 5 and also comprising a network site which posts an update of at least a portion of at least one electronic book which has become outdated and wherein the book updater is operative to automatically dial said network site.

8. An electronic book storage system comprising:

a first plurality of electronic books of a first content type; and

a second plurality of electronic books of a second content type;

wherein all of the first and second pluralities of electronic books are organized in a single hierarchical format such that a single hierarchical level within said single hierarchical format stores:

meaningful chunks of information of the first content type, each chunk comprising a meaningful portion of an individual one of said first plurality of electronic books of a first content type; and

meaningful chunks of information of the second content type, each chunk comprising a meaningful portion of an individual one of said second plurality of electronic books of a second content type.

9. A system according to claim 8 wherein the first and pluralities of electronic books include books of any of the following content types:

cookbooks;
road atlases;
dictionaries;
encyclopedias;
telephone books;
picture books;
novels;
catalogs;
instruction manuals;
newspapers; and
newsmagazines.

10. A multimedia book generating system comprising:

a multimedia database storing a multiplicity of multimedia elements; and

a digital book generator operative to generate

a digital book including text and at least one link from a location in the text to at least one of the multiplicity of multimedia elements in the multimedia database.

11. An electronic research method comprising:

storing a multiplicity of electronic books in an electronic bookstore; and

associating a plurality of personal electronic libraries with a corresponding plurality of workstations, including:

downloading selected ones from among the multiplicity of electronic books in the electronic bookstore into the individual personal electronic library; and

searching a plurality of books in the individual personal electronic library.

12. A method according to claim 11 wherein the searching step comprises searching all books in the individual personal electronic library in a single search operation.

13. A method according to claim 11 wherein the searching step comprises accepting a user's definition of a subset of books in the user's personal electronic library and searching only the subset of books.

14. A method for searching through electronic information, the method comprising:

storing a multiplicity of books each as a separate object; and

performing an electronic researching operation including:

searching individual ones of the multiplicity of books and generating a book search output; and

merging book search outputs of a plurality

of searches performed by the book searcher on a plurality of user-selected books from among the multiplicity of books, thereby to generate a global search output.

15. An electronic library updating method comprising:

storing a multiplicity of electronic books in an electronic bookstore; and

associating a plurality of personal electronic libraries with a corresponding plurality of workstations, including, for each individual personal electronic library:

downloading selected ones from among the multiplicity of electronic books in the electronic bookstore into the individual personal electronic library; and

performing an automatic background update of at least a portion of at least one electronic book in the individual personal electronic library which has become outdated.

16. A method according to claim 15 wherein each electronic book is organized as a hierarchy of book portions each comprising a meaningful portion of the contents of an electronic book and wherein the update performing step, when updating an electronic book, comprises updating only those portions of the electronic book which have become outdated.

17. A method according to claim 15 and also comprising posting, on a network site, an update of at least a portion of at least one electronic book which has become outdated and wherein the update performing step comprises automatically dialing said network site.

18. A method for storing electronic books, the method comprising:

storing a first plurality of electronic books of a first content type; and

storing a second plurality of electronic books of a second content type,

wherein the stored information is organized in a single hierarchical format such that a single hierarchical level within said single hierarchical format stores meaningful chunks of information of the first content type, each chunk comprising a meaningful portion of an individual one of said first plurality of electronic books of a first content type and meaningful chunks of information of the second content type, each chunk comprising a meaningful portion of an individual one of said second plurality of electronic books of a second content type.

19. A method according to claim 18 wherein the first and pluralities of electronic books include books of any of the following content types:

cookbooks;
road atlases;
dictionaries;
encyclopedias;
telephone books;
picture books;
novels;
catalogs;
instruction manuals;
newspapers; and
newsmagazines.

20. A method for multimedia book generation, the method comprising:

storing a multiplicity of multimedia items in a multimedia database; and

generating a digital book including text and at least one link from a location in the text to at least one of the multiplicity of multimedia elements in the multimedia database.

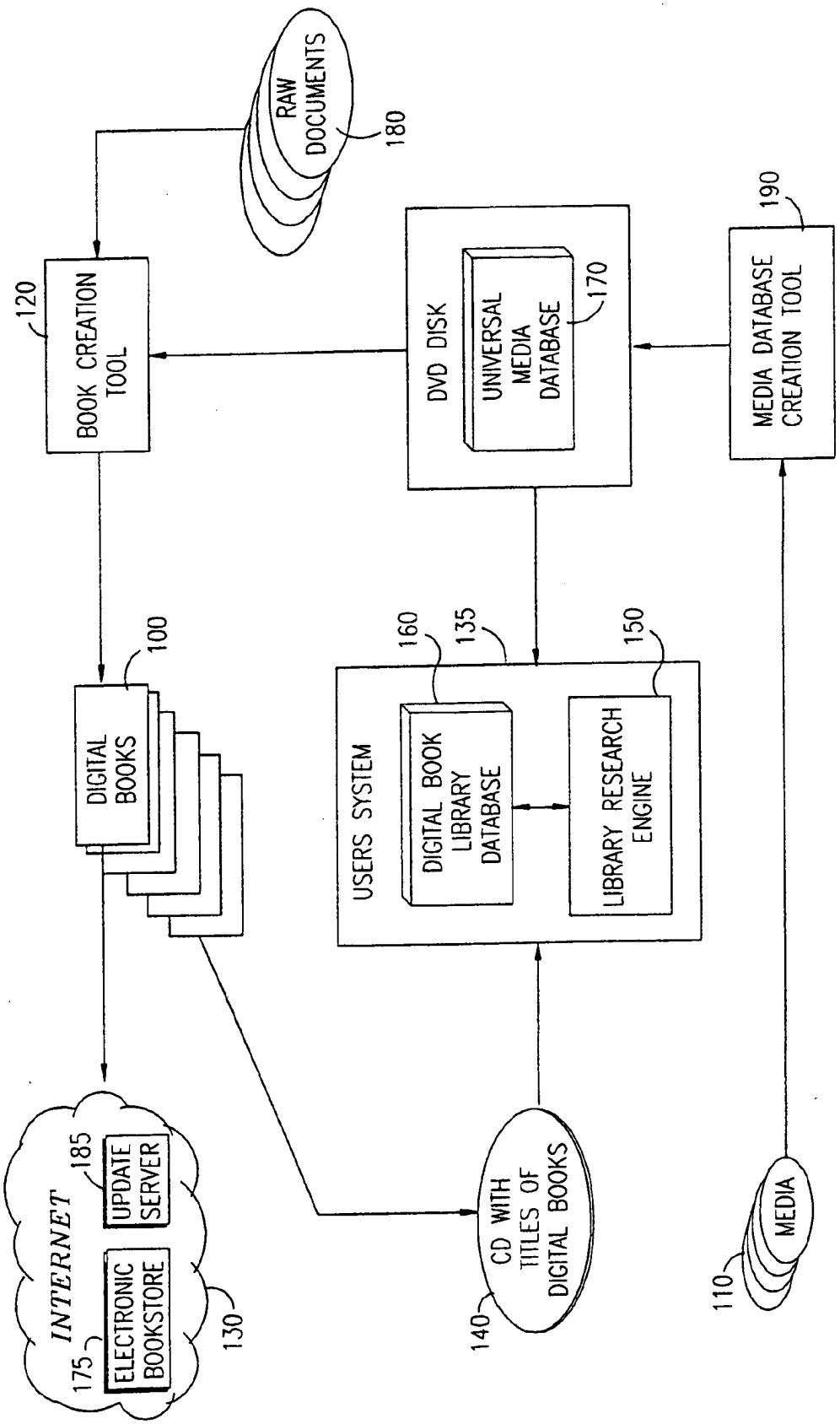

RAW DOCUMENTS
180
120
BOOK CREATION TOOL
DVD DISK
UNIVERSAL MEDIA DATABASE
170
190
MEDIA DATABASE CREATION TOOL
100
DIGITAL BOOKS
160
135
150
USERS SYSTEM
DIGITAL BOOK LIBRARY DATABASE
LIBRARY RESEARCH ENGINE
INTERNET
185
UPDATE SERVER
175
ELECTRONIC BOOKSTORE
130
CD WITH TITLES OF DIGITAL BOOKS
140
MEDIA
110

FIG. 1

FIG. 2

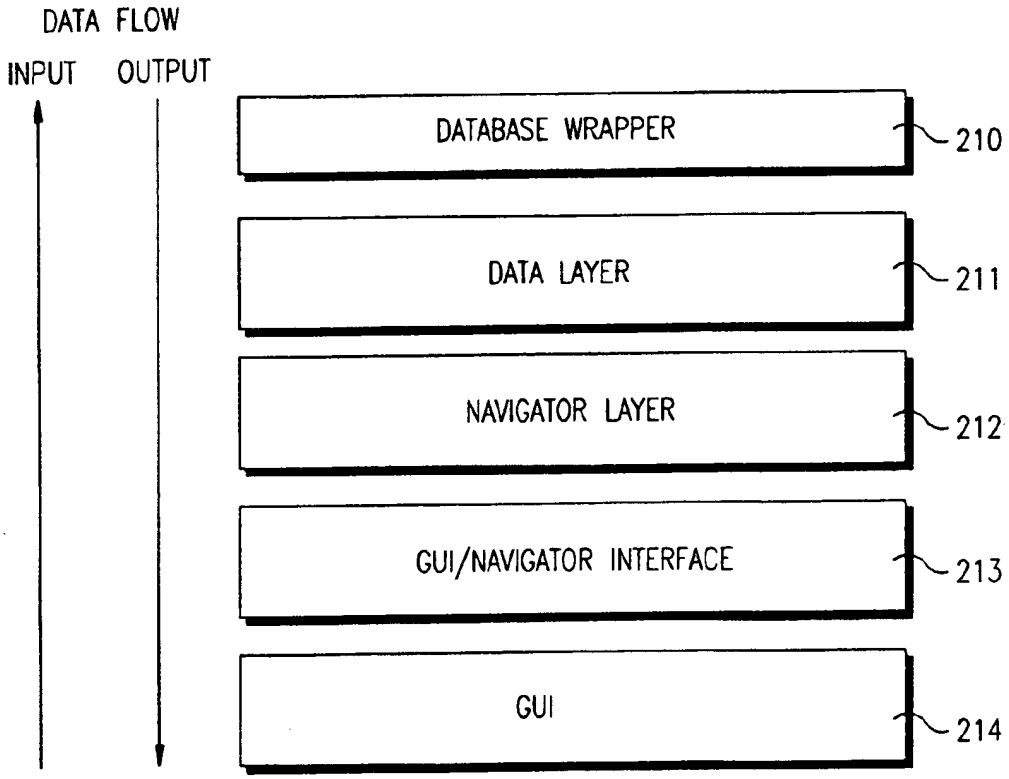

DATA FLOW
INPUT
OUTPUT
DATABASE WRAPPER
210
DATA LAYER
211
NAVIGATOR LAYER
212
GUI/NAVIGATOR INTERFACE
213
GUI
214

FIG. 3

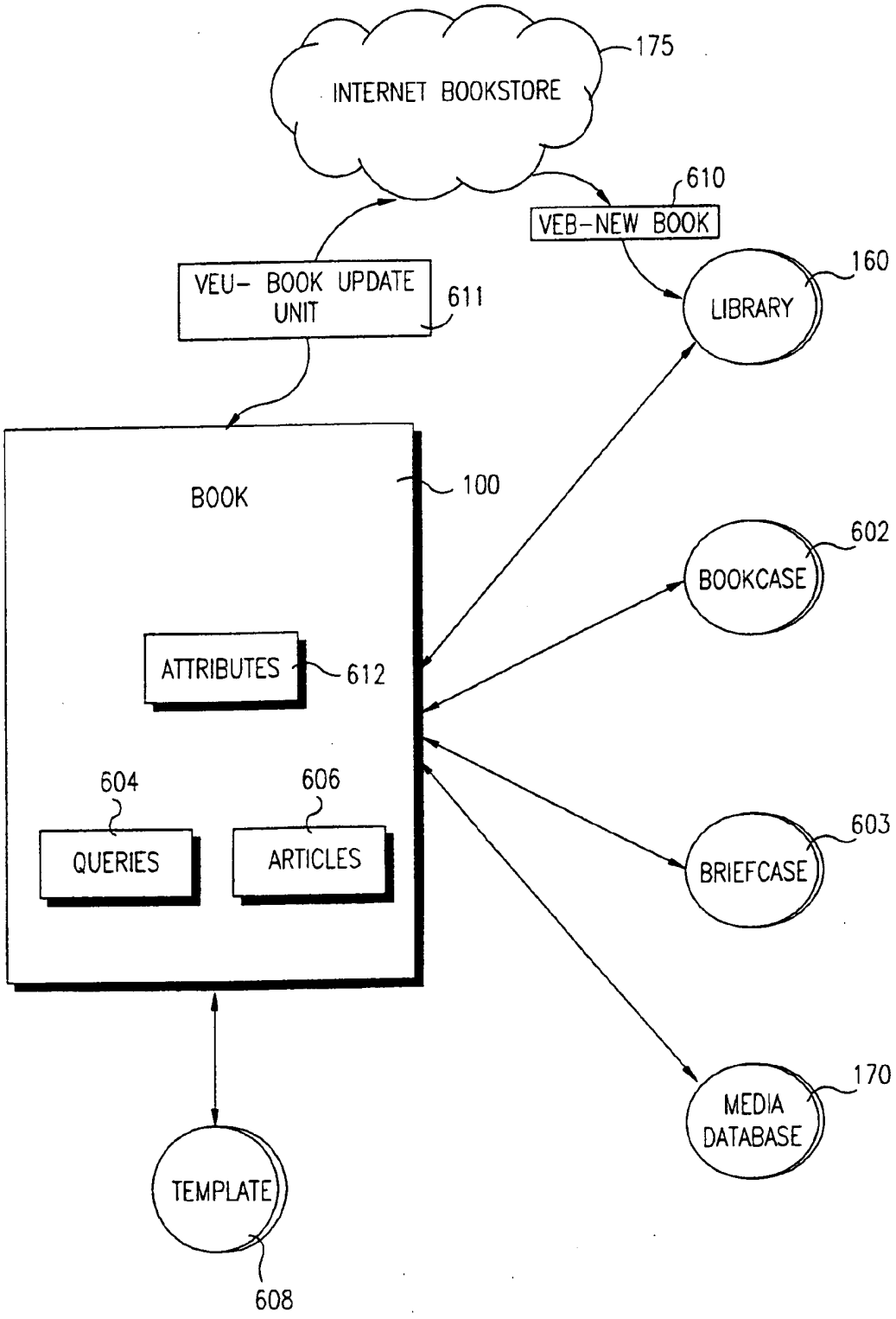

INTERNET BOOKSTORE
175
610
VEB-NEW BOOK
VEU- BOOK UPDATE UNIT
611
160
LIBRARY
BOOK
100
602
BOOKCASE
ATTRIBUTES
612
604
606
QUERIES
ARTICLES
603
BRIEFCASE
170
MEDIA DATABASE
TEMPLATE
608

FIG. 4

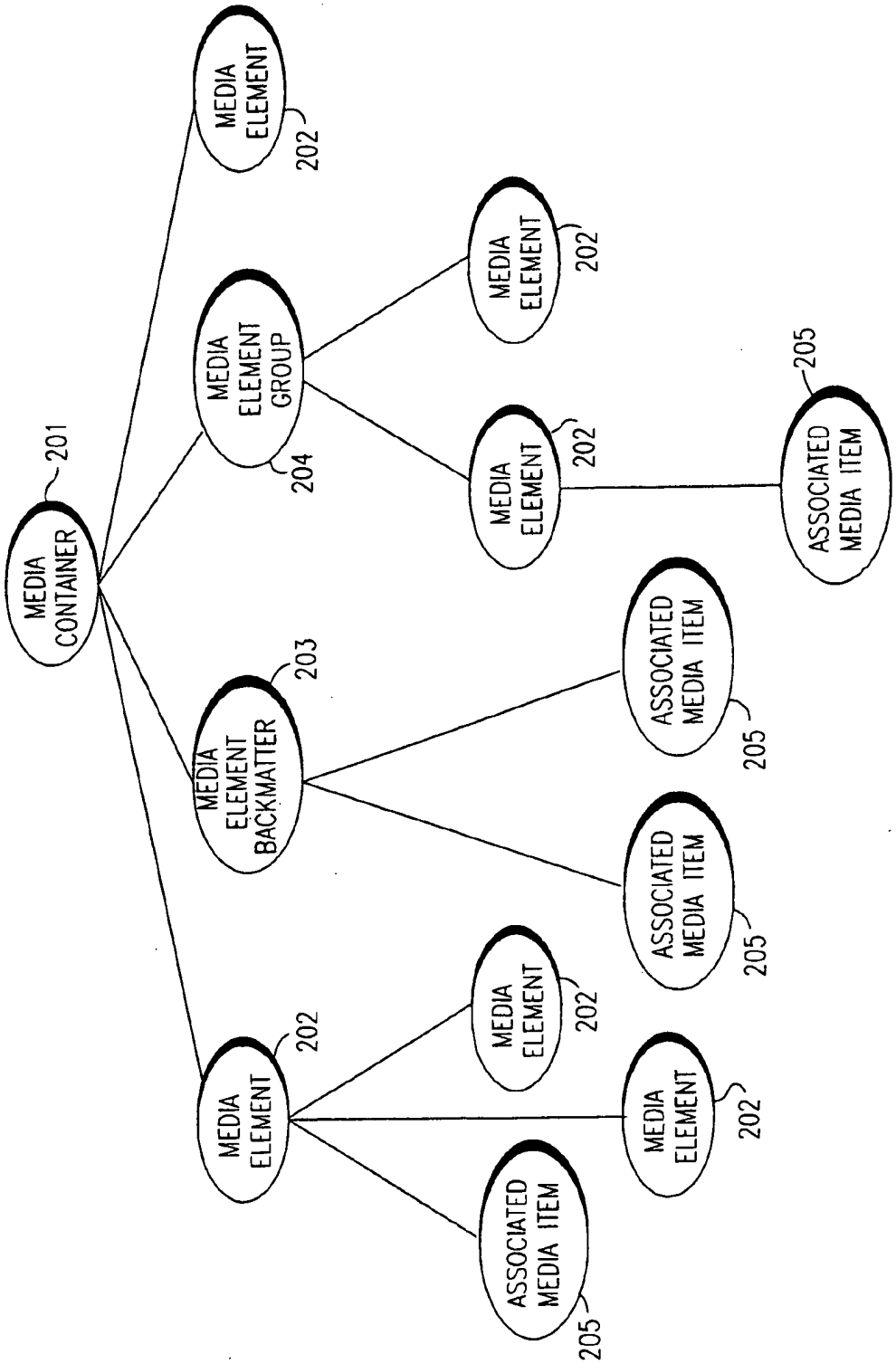

MEDIA CONTAINER
201
MEDIA ELEMENT
202
MEDIA ELEMENT GROUP
204
MEDIA ELEMENT
202
MEDIA ELEMENT
202
ASSOCIATED MEDIA ITEM
205
MEDIA ELEMENT BACKMATTER
203
ASSOCIATED MEDIA ITEM
205
ASSOCIATED MEDIA ITEM
205
MEDIA ELEMENT
202
MEDIA ELEMENT
202
MEDIA ELEMENT
202
ASSOCIATED MEDIA ITEM
205

FIG. 5A

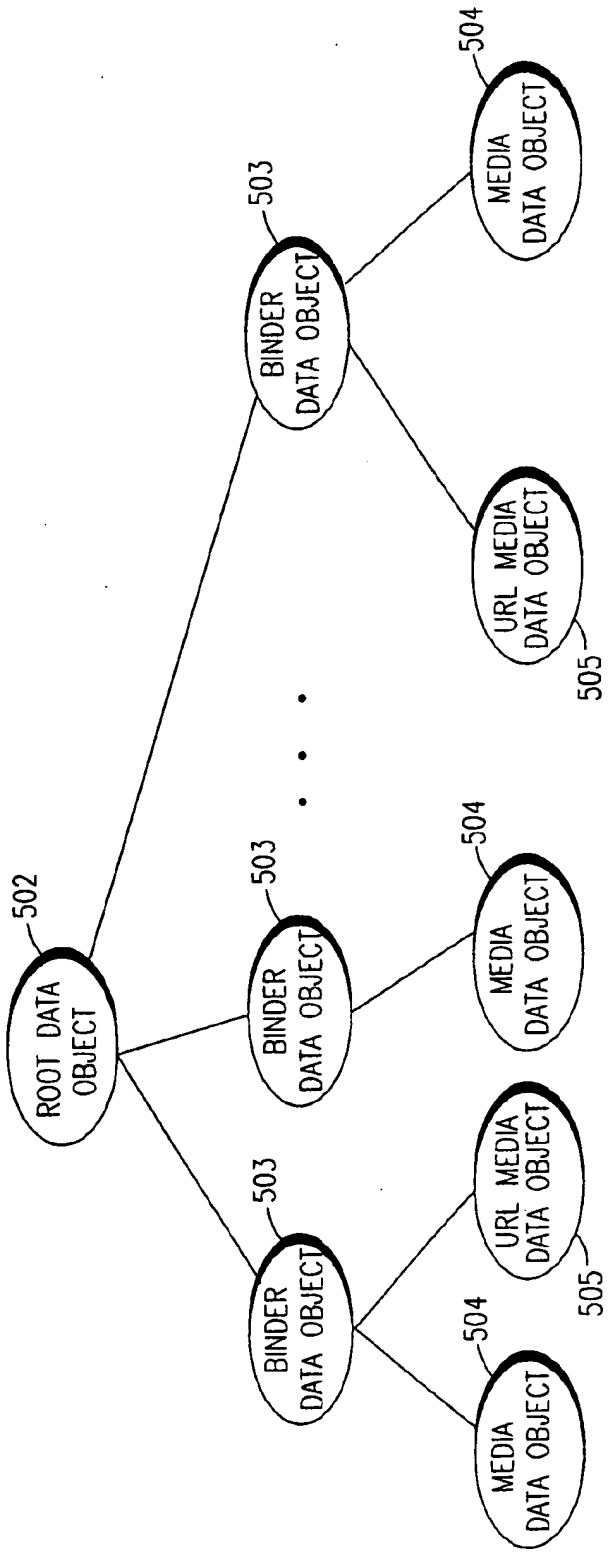

ROOT DATA OBJECT
502
BINDER DATA OBJECT
503
BINDER DATA OBJECT
503
BINDER DATA OBJECT
503
MEDIA DATA OBJECT
504
MEDIA DATA OBJECT
504
MEDIA DATA OBJECT
504
URL MEDIA DATA OBJECT
505
URL MEDIA DATA OBJECT
505

FIG. 5B

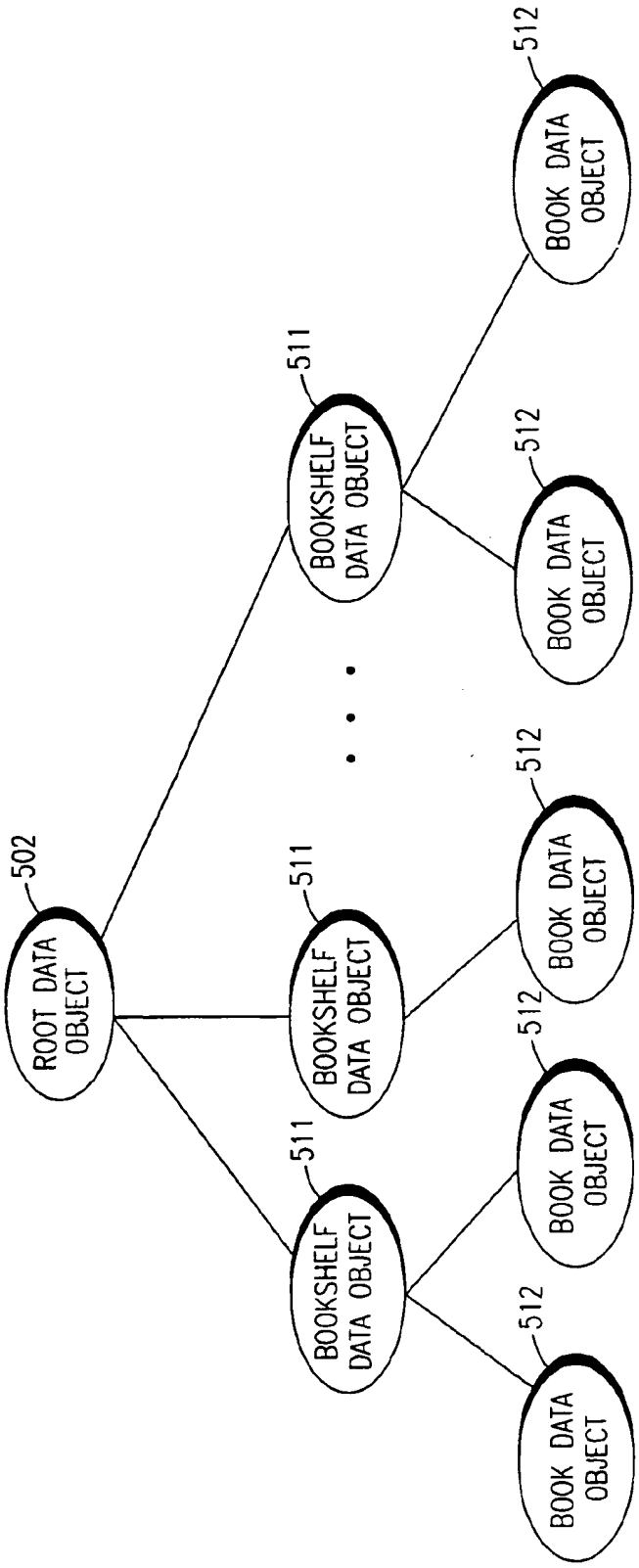
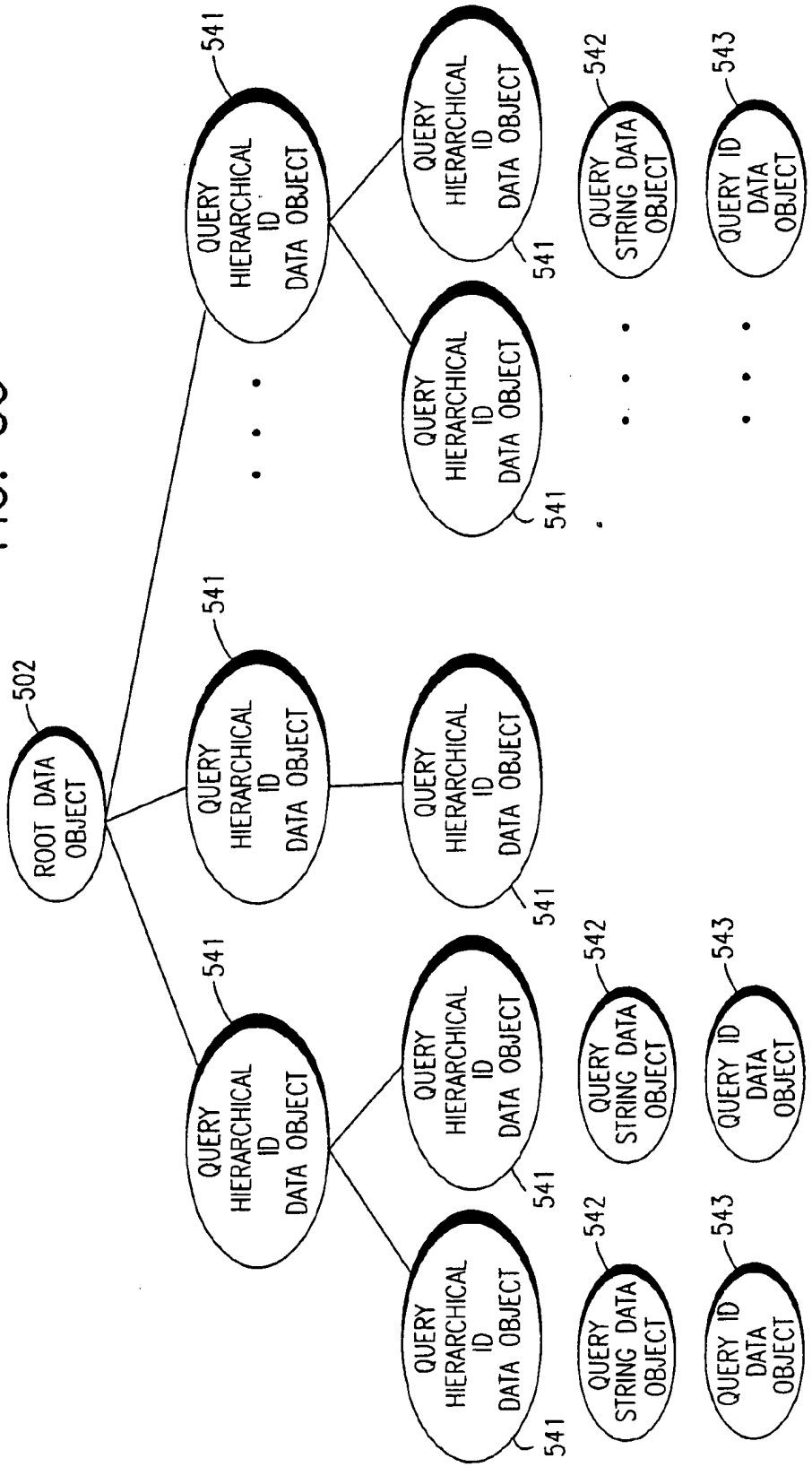

502
ROOT DATA OBJECT
511
BOOKSHELF DATA OBJECT
511
BOOKSHELF DATA OBJECT
511
BOOKSHELF DATA OBJECT
512
BOOK DATA OBJECT
512
BOOK DATA OBJECT
512
BOOK DATA OBJECT
512
BOOK DATA OBJECT
512
BOOK DATA OBJECT

FIG. 5C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541
QUERY HIERARCHICAL ID DATA OBJECT
542
QUERY STRING DATA OBJECT
543
QUERY ID DATA OBJECT

FIG. 6

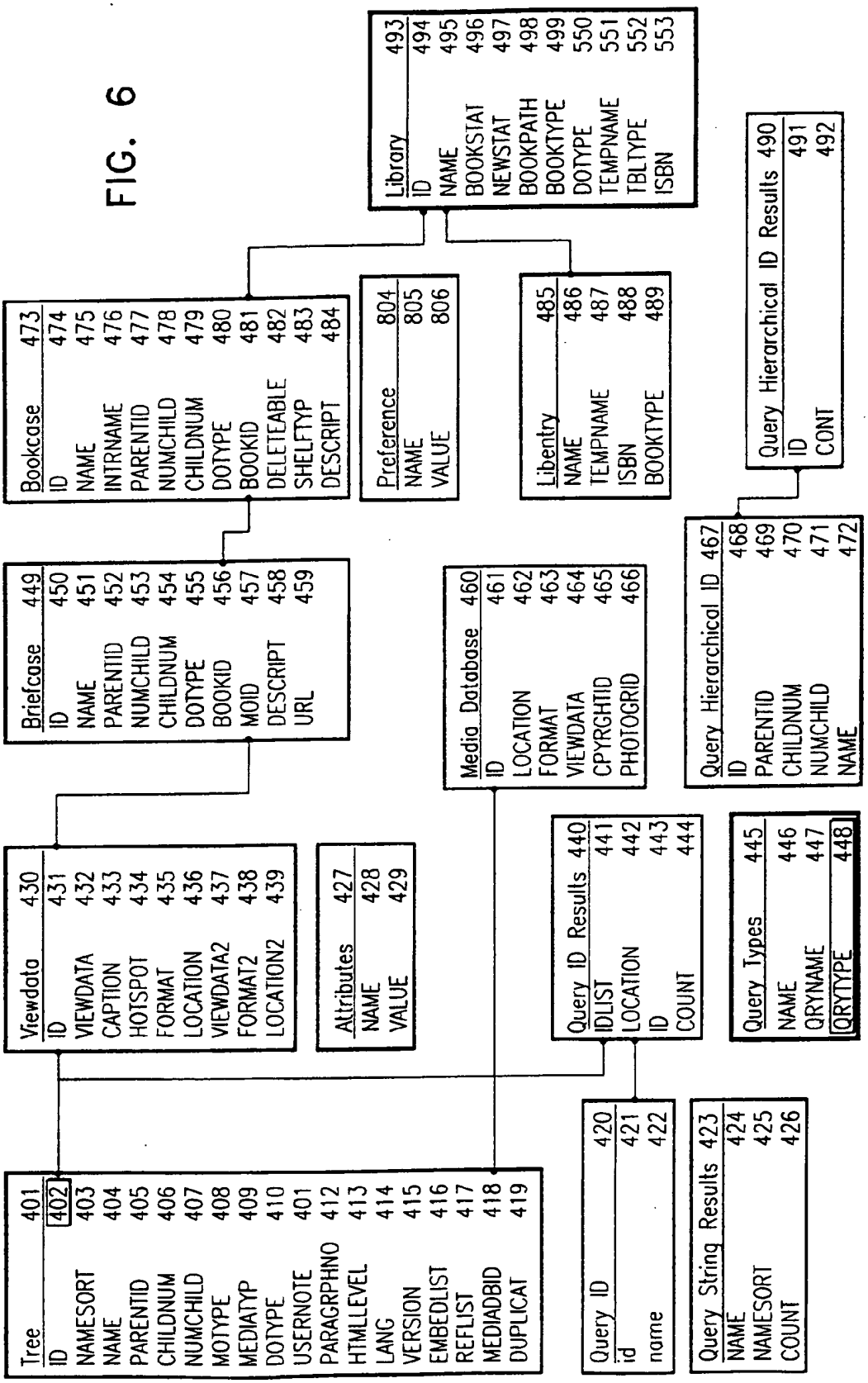
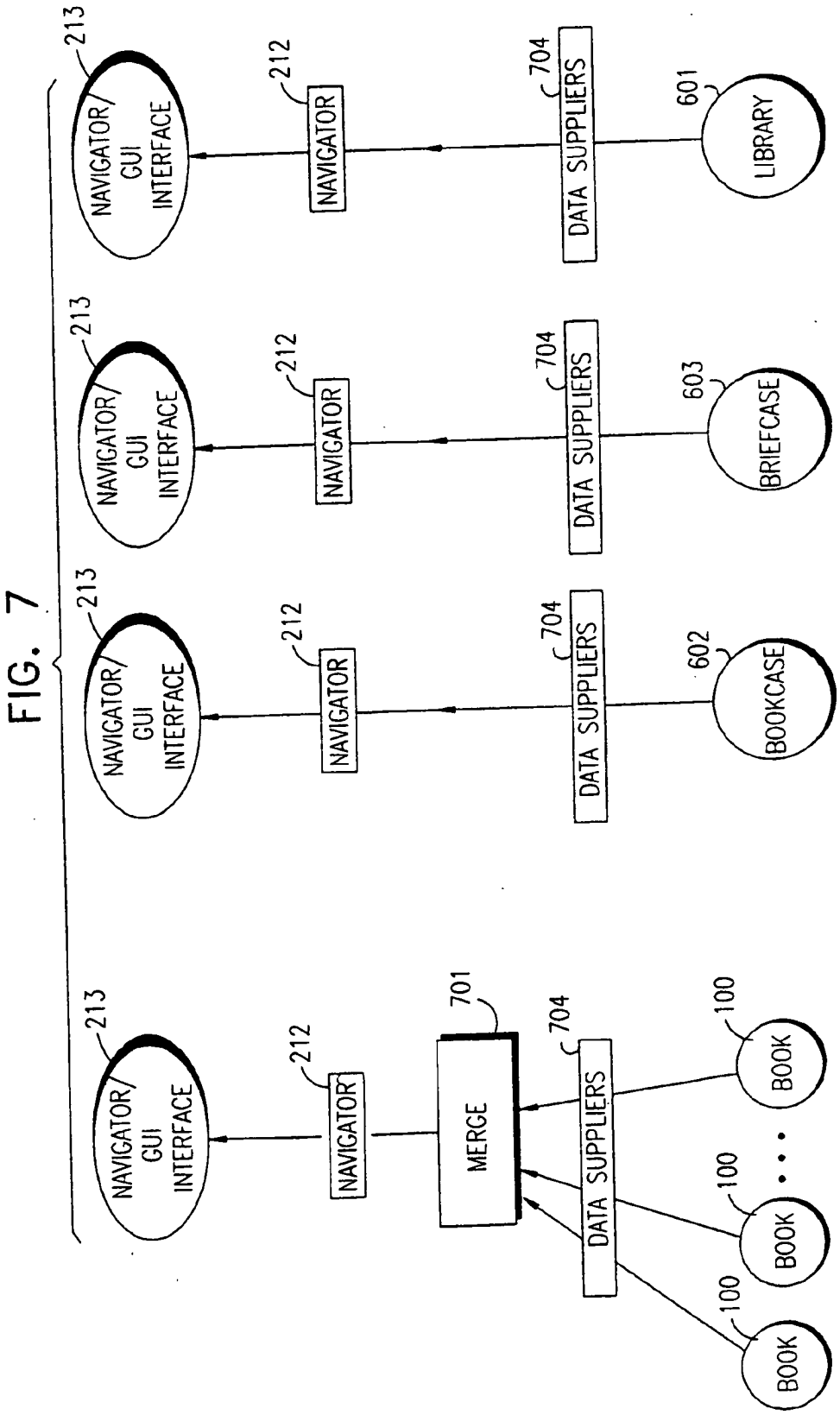

Library 493
ID 494
NAME 495
BOOKSTAT 496
NEWSTAT 497
BOOKPATH 498
BOOKTYPE 499
DOTYPE 550
TEMPNAME 551
TBLTYPE 552
ISBN 553
Bookcase 473
ID 474
NAME 475
INTRNAME 476
PARENTID 477
NUMCHILD 478
CHILDNUM 479
DOTYPE 480
BOOKID 481
DELETEABLE 482
SHELFTYP 483
DESCRIPT 484
Preference 804
NAME 805
VALUE 806
Libentry 485
NAME 486
TEMPNAME 487
ISBN 488
BOOKTYPE 489
Query Hierarchical ID Results 490
ID 491
CONT 492
Briefcase 449
ID 450
NAME 451
PARENTID 452
NUMCHILD 453
CHILDNUM 454
DOTYPE 455
BOOKID 456
MOID 457
DESCRIPT 458
URL 459
Media Database 460
ID 461
LOCATION 462
FORMAT 463
VIEWDATA 464
CPYRGHTID 465
PHOTOGRID 466
Query Hierarchical ID 467
ID 468
PARENTID 469
CHILDNUM 470
NUMCHILD 471
NAME 472
Viewdata 430
ID 431
VIEWDATA 432
CAPTION 433
HOTSPOT 434
FORMAT 435
LOCATION 436
VIEWDATA2 437
FORMAT2 438
LOCATION2 439
Attributes 427
NAME 428
VALUE 429
Query ID Results 440
IDLIST 441
LOCATION 442
ID 443
COUNT 444
Query Types 445
NAME 446
QRYNAME 447
QRYTYPE 448
Tree 401
ID 402
NAMESORT 403
NAME 404
PARENTID 405
CHILDNUM 406
NUMCHILD 407
MOTYPE 408
MEDIATYP 409
DOTYPE 410
USERNOTE 401
PARAGRPHNO 412
HTMLLEVEL 413
LANG 414
VERSION 415
EMBEDLIST 416
REFLIST 417
MEDIADBID 418
DUPLICAT 419
Query ID 420
id 421
name 422
Query String Results 423
NAME 424
NAMESORT 425
COUNT 426

FIG. 7


NAVIGATOR/ GUI INTERFACE
213
NAVIGATOR
212
MERGE
701
DATA SUPPLIERS
704
BOOK
100
BOOK
100
BOOK
100
BOOKCASE
602
BRIEFCASE
603
LIBRARY
601

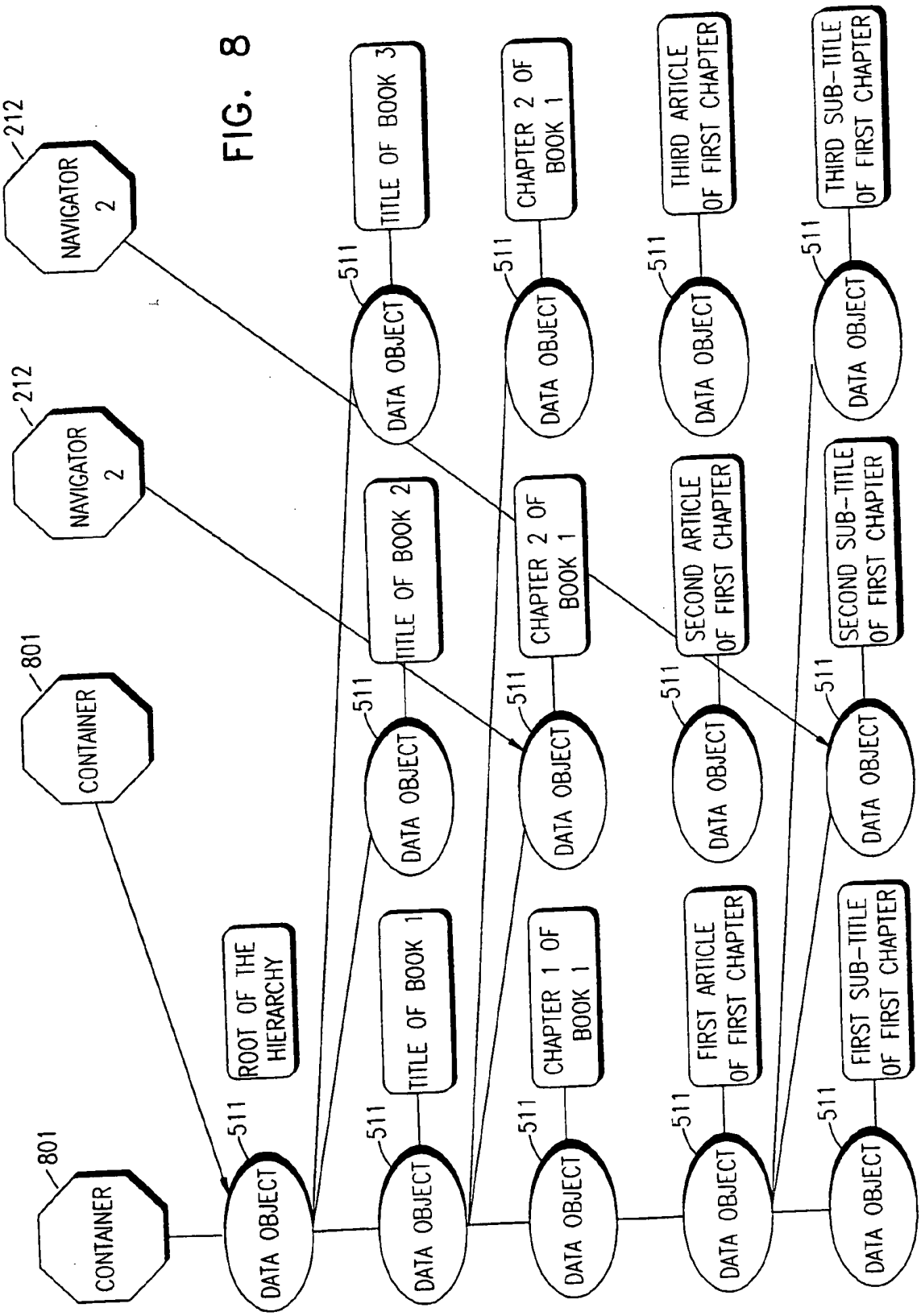

CONTAINER
801
DATA OBJECT
511
ROOT OF THE HIERARCHY
CONTAINER
801
NAVIGATOR 2
212
DATA OBJECT
511
TITLE OF BOOK 1
DATA OBJECT
511
TITLE OF BOOK 2
NAVIGATOR 2
212
DATA OBJECT
511
TITLE OF BOOK 3
NAVIGATOR 2
212
DATA OBJECT
511
CHAPTER 1 OF BOOK 1
DATA OBJECT
511
CHAPTER 2 OF BOOK 1
DATA OBJECT
511
CHAPTER 2 OF BOOK 1
DATA OBJECT
511
FIRST ARTICLE OF FIRST CHAPTER
DATA OBJECT
511
SECOND ARTICLE OF FIRST CHAPTER
DATA OBJECT
511
THIRD ARTICLE OF FIRST CHAPTER
DATA OBJECT
511
FIRST SUB-TITLE OF FIRST CHAPTER
DATA OBJECT
511
SECOND SUB-TITLE OF FIRST CHAPTER
DATA OBJECT
511
THIRD SUB-TITLE OF FIRST CHAPTER

FIG. 8

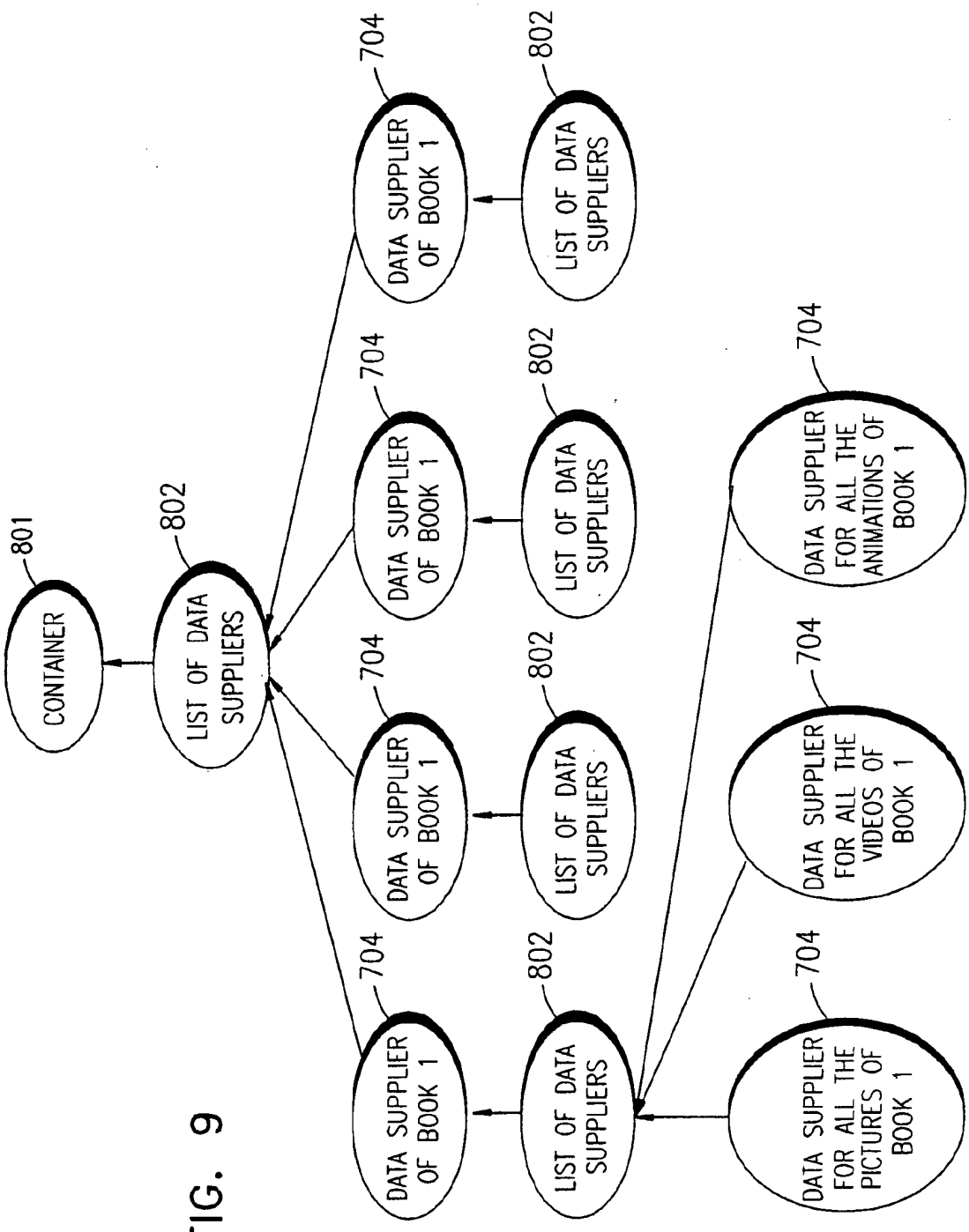

801
CONTAINER
802
LIST OF DATA SUPPLIERS
704
DATA SUPPLIER OF BOOK 1
802
LIST OF DATA SUPPLIERS
704
DATA SUPPLIER OF BOOK 1
802
LIST OF DATA SUPPLIERS
704
DATA SUPPLIER OF BOOK 1
802
LIST OF DATA SUPPLIERS
704
DATA SUPPLIER OF BOOK 1
802
LIST OF DATA SUPPLIERS
704
DATA SUPPLIER FOR ALL THE ANIMATIONS OF BOOK 1
704
DATA SUPPLIER FOR ALL THE VIDEOS OF BOOK 1
704
DATA SUPPLIER FOR ALL THE PICTURES OF BOOK 1

FIG. 9

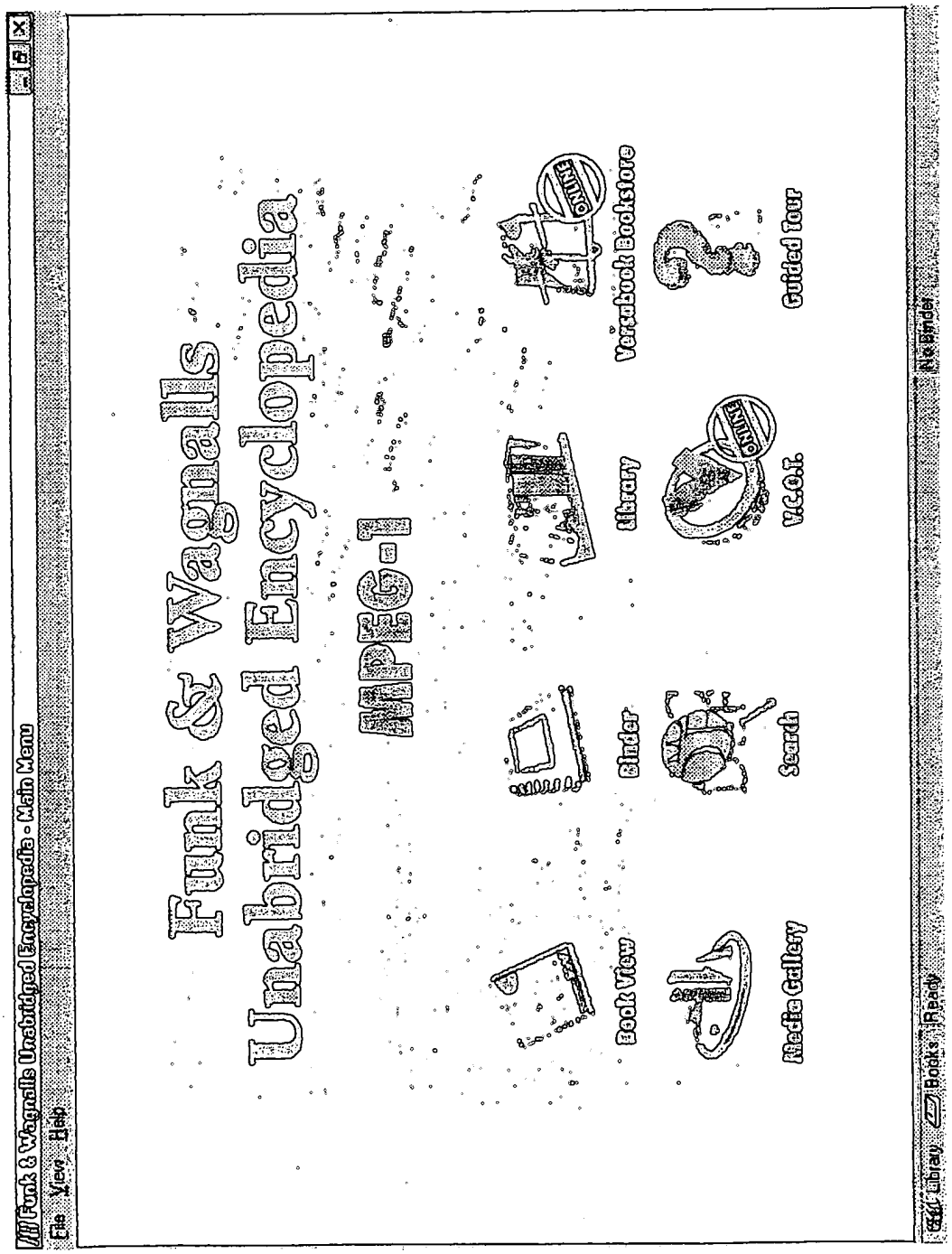

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Fig. 10

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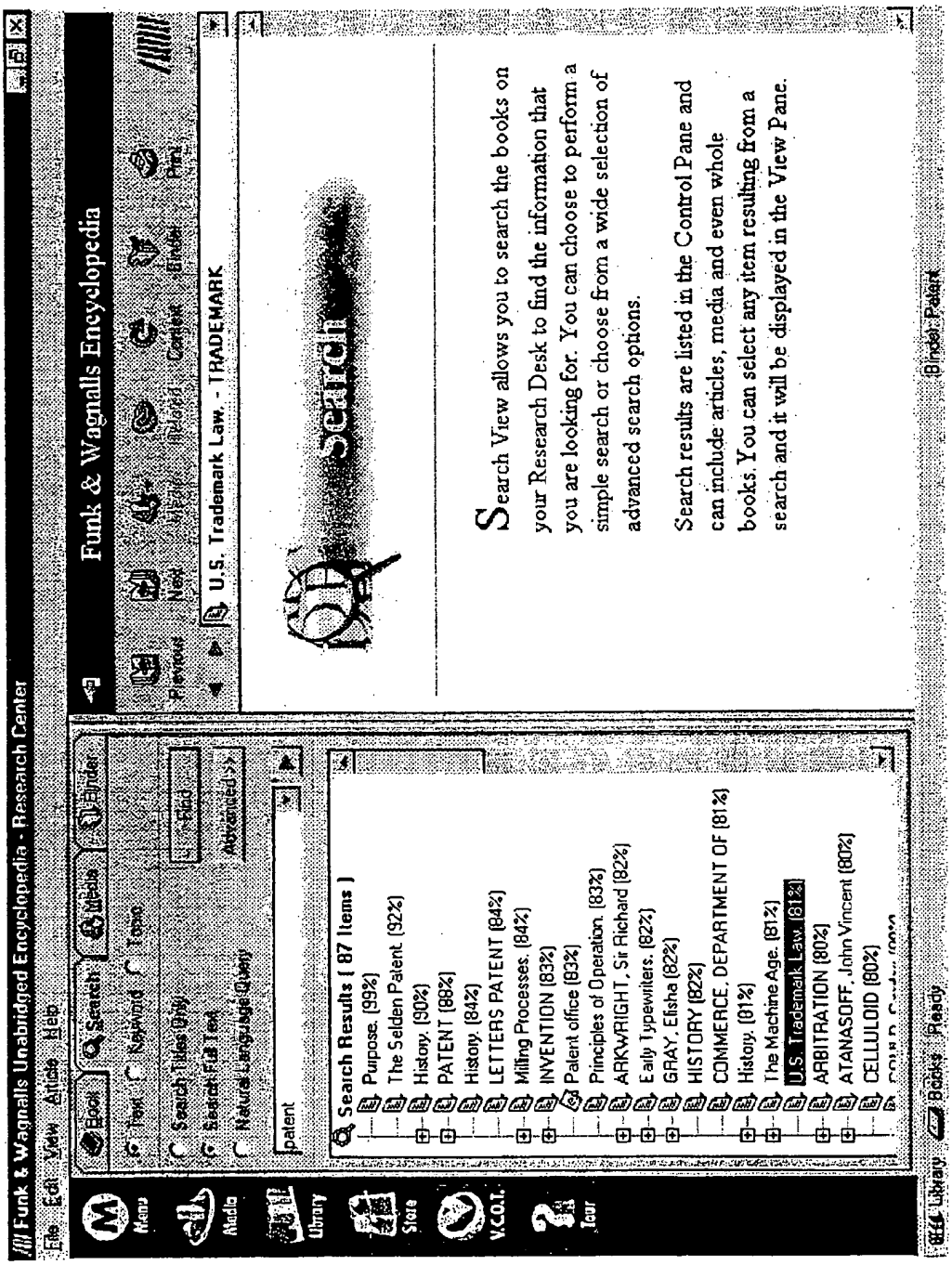

Fig.11

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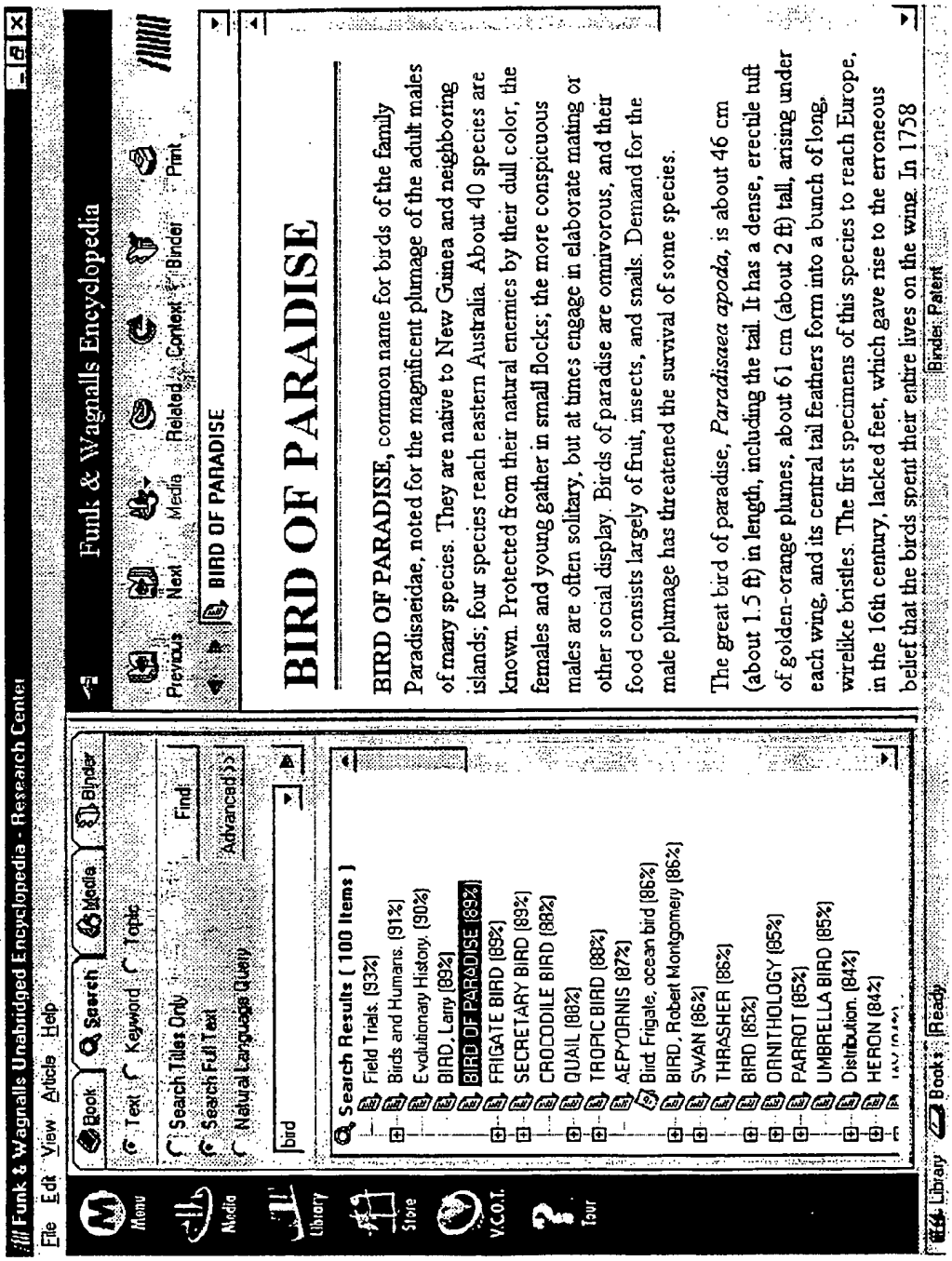
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Advanced >>
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BIRD OF PARADISE (89%)
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AEPYORNIS (87%)
Bird Frigate, ocean bird (86%)
BIRD, Robert Montgomery (86%)
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BIRD (85%)
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Distribution. (84%)
HERON (84%)
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BIRD OF PARADISE
BIRD OF PARADISE
BIRD OF PARADISE, common name for birds of the family Paradisaeidae, noted for the magnificent plumage of the adult males of many species. They are native to New Guinea and neighboring islands; four species reach eastern Australia. About 40 species are known. Protected from their natural enemies by their dull color, the females and young gather in small flocks; the more conspicuous males are often solitary, but at times engage in elaborate mating or other social display. Birds of paradise are omnivorous, and their food consists largely of fruit, insects, and snails. Demand for the male plumage has threatened the survival of some species.
The great bird of paradise, Paradisaea apoda, is about 46 cm (about 1.5 ft) in length, including the tail. It has a dense, erectile tuft of golden-orange plumes, about 61 cm (about 2 ft) tall, arising under each wing, and its central tail feathers form into a bunch of long, wirelike bristles. The first specimens of this species to reach Europe, in the 16th century, lacked feet, which gave rise to the erroneous belief that the birds spent their entire lives on the wing. In 1758
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Fig.12

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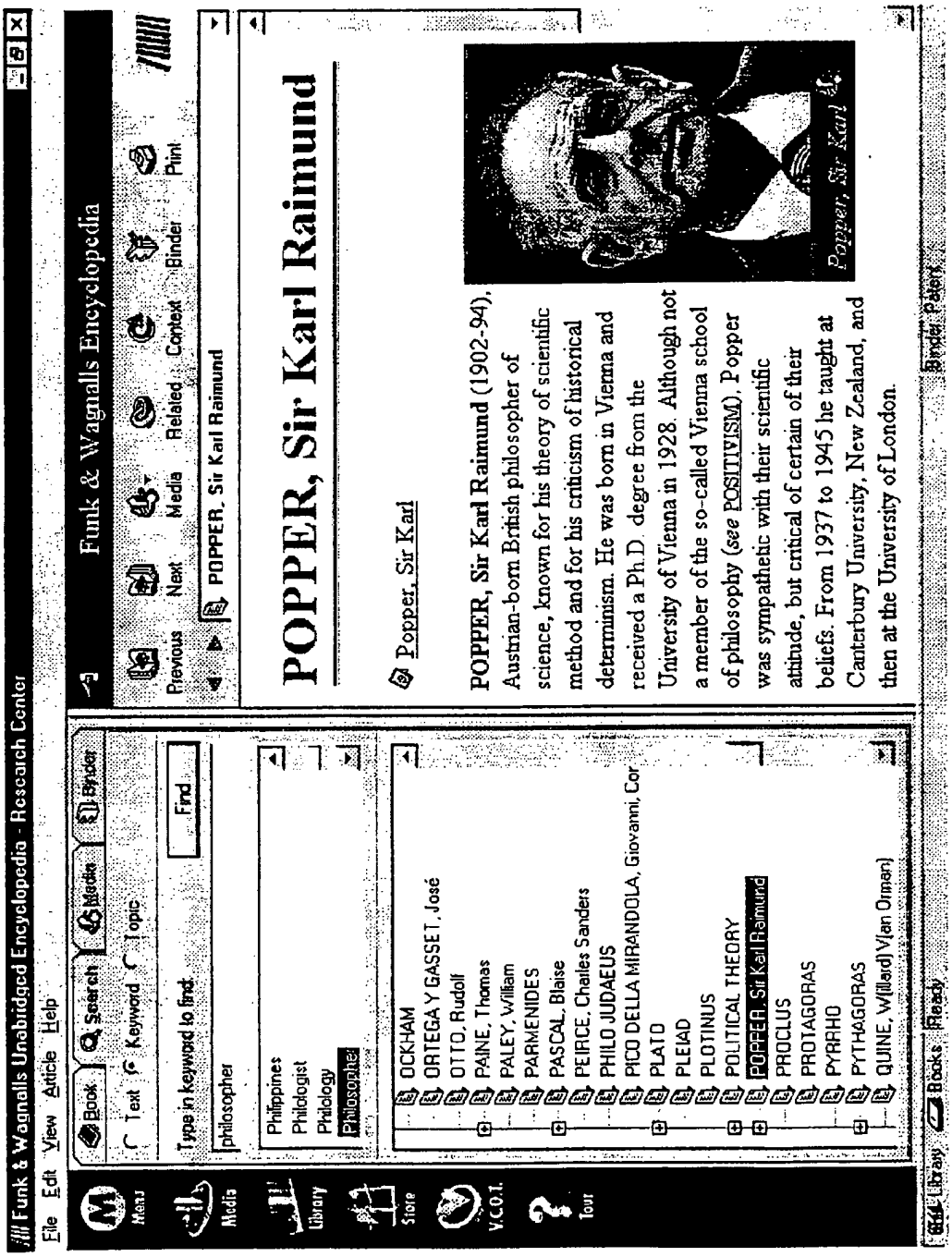
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Topic
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Philippines
Philologist
Philology
Philosopher
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ORTEGA Y GASSET, José
OTTO, Rudolf
PAINE, Thomas
PALEY, William
PARMENIDES
PASCAL, Blaise
PEIRCE, Charles Sanders
PHILO JUDAEUS
PICO DELLA MIRANDOLA, Giovanni, Cor
PLATO
PLEIAD
PLOTINUS
POLITICAL THEORY
POPPER, Sir Karl Raimund
PROCLUS
PROTAGORAS
PYRRHO
PYTHAGORAS
QUINE, W[illard] V[an Orman]
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POPPER, Sir Karl Raimund
POPPER, Sir Karl Raimund
Popper, Sir Karl
POPPER, Sir Karl Raimund (1902-94), Austrian-born British philosopher of science, known for his theory of scientific method and for his criticism of historical determinism. He was born in Vienna and received a Ph.D. degree from the University of Vienna in 1928. Although not a member of the so-called Vienna school of philosophy (see POSITIVISM), Popper was sympathetic with their scientific attitude, but critical of certain of their beliefs. From 1937 to 1945 he taught at Canterbury University, New Zealand, and then at the University of London.
Popper, Sir Karl
Ready

Fig.13

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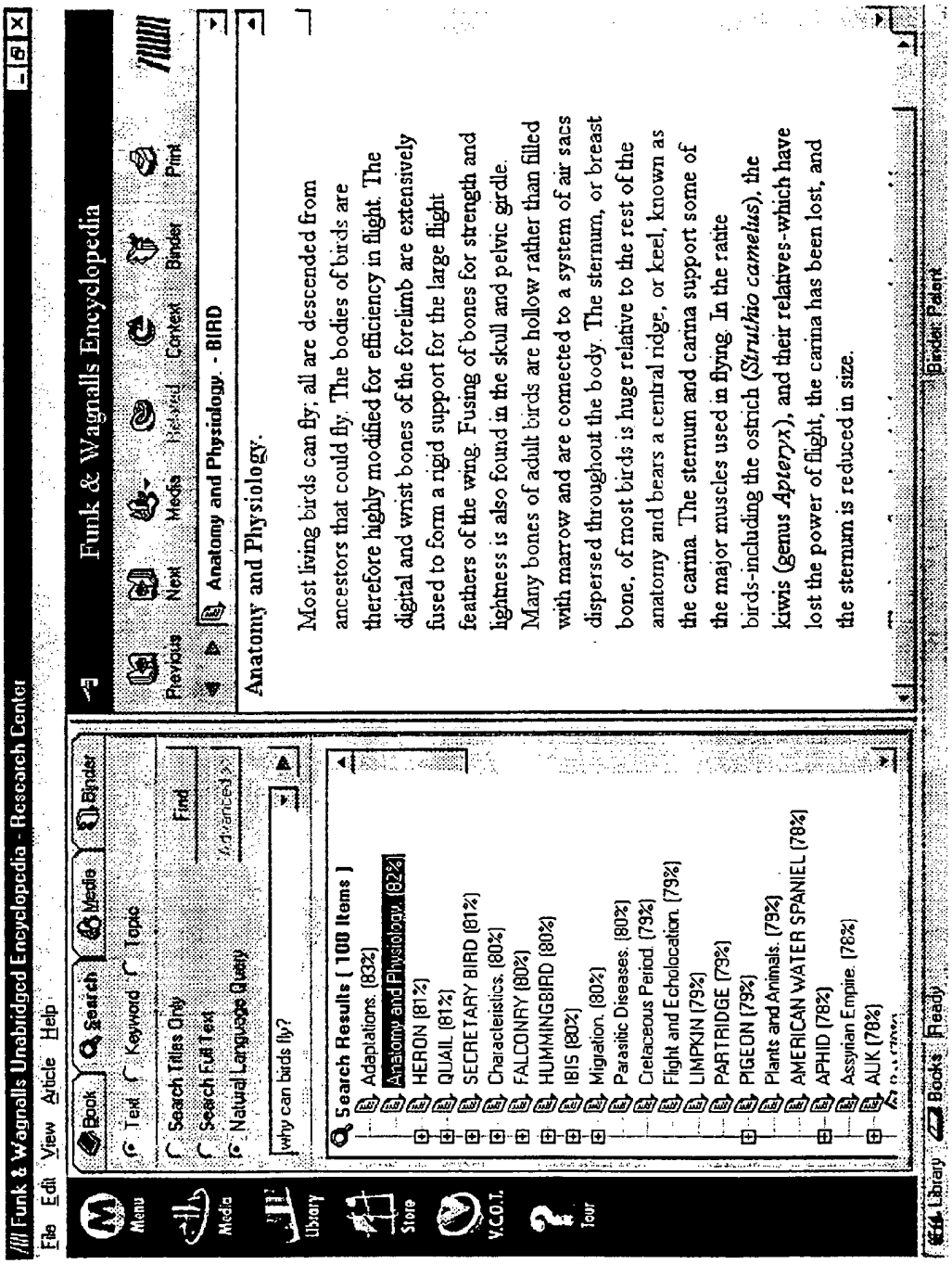

Fig. 14

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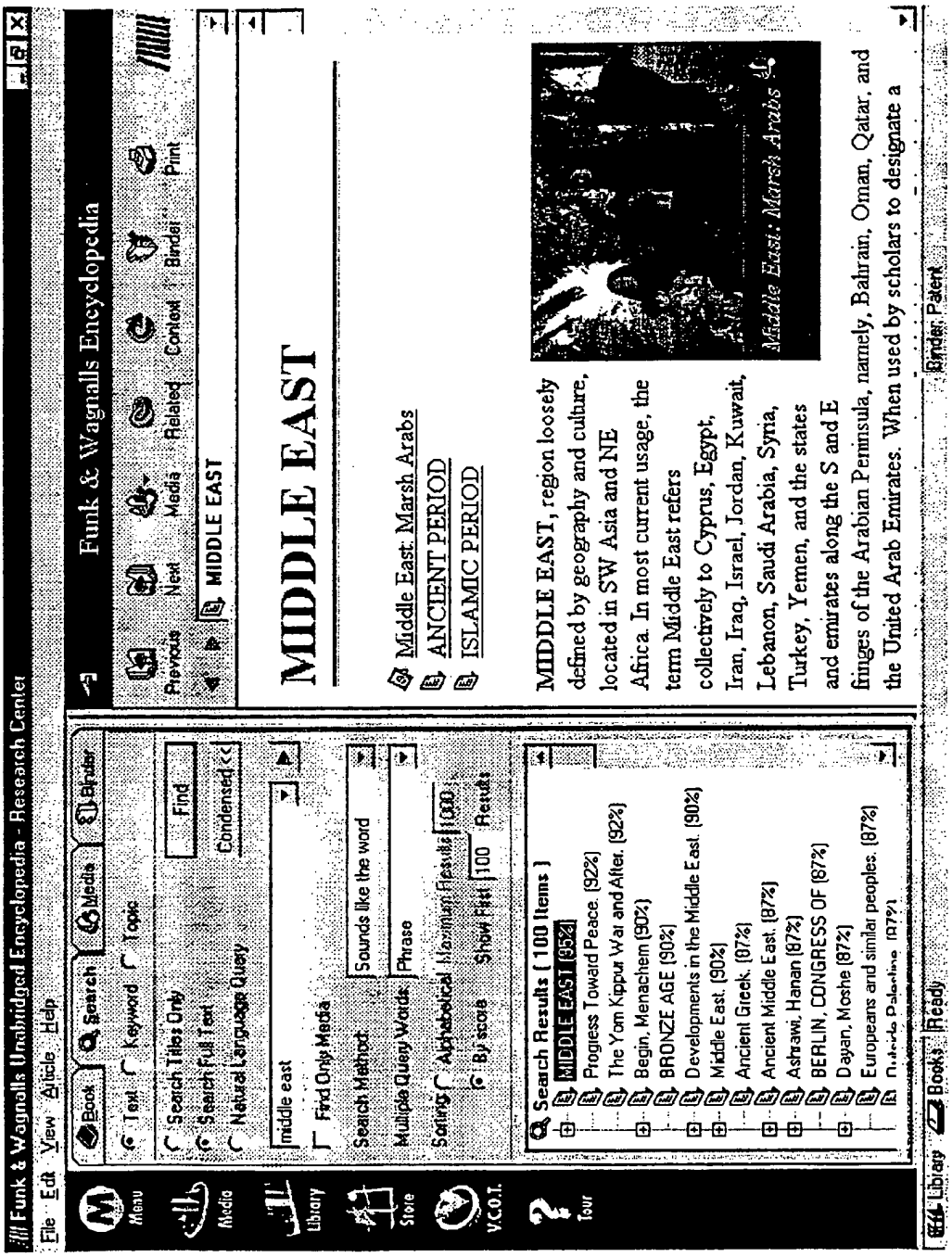
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Results
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The Yom Kippur War and After. (92%)
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Dayan, Moshe (87%)
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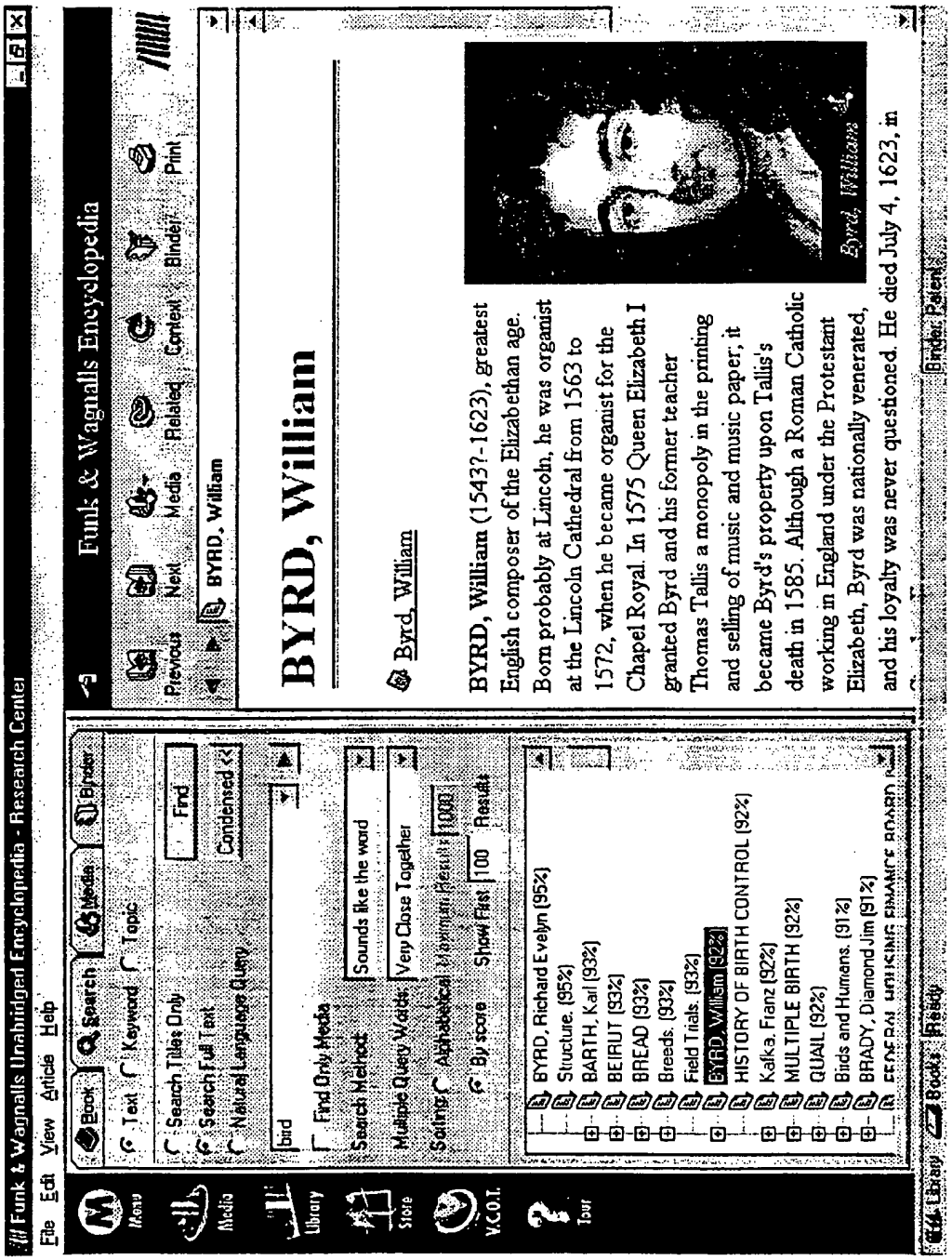
MIDDLE EAST
MIDDLE EAST
Middle East: Marsh Arabs
ANCIENT PERIOD
ISLAMIC PERIOD
MIDDLE EAST, region loosely defined by geography and culture, located in SW Asia and NE Africa. In most current usage, the term Middle East refers collectively to Cyprus, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Saudi Arabia, Syria, Turkey, Yemen, and the states and emirates along the S and E fringes of the Arabian Peninsula, namely, Bahrain, Oman, Qatar, and the United Arab Emirates. When used by scholars to designate a
Middle East: Marsh Arabs
Binder Paten

Fig. 15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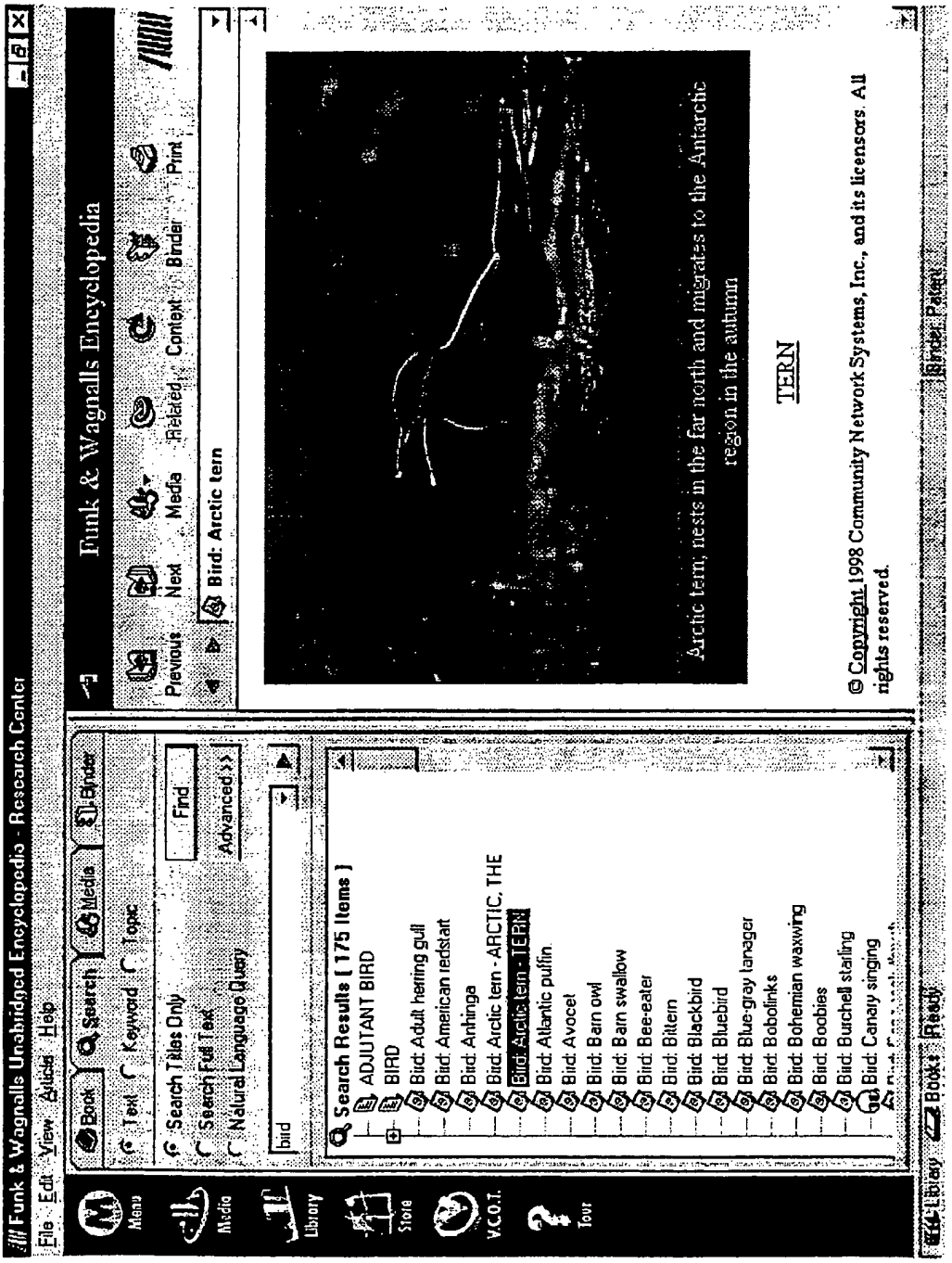
BYRD, William
Byrd, William
BYRD, William (1543?-1623), greatest English composer of the Elizabethan age. Born probably at Lincoln, he was organist at the Lincoln Cathedral from 1563 to 1572, when he became organist for the Chapel Royal. In 1575 Queen Elizabeth I granted Byrd and his former teacher Thomas Tallis a monopoly in the printing and selling of music and music paper; it became Byrd's property upon Tallis's death in 1585. Although a Roman Catholic working in England under the Protestant Elizabeth, Byrd was nationally venerated, and his loyalty was never questioned. He died July 4, 1623, in
Byrd, William
Binder Palette

Fig. 16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BIRD
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Bird: American redstart
Bird: Anhinga
Bird: Arctic tern - ARCTIC, THE
Bird: Arctic tern - TERN
Bird: Atlantic puffin
Bird: Avocet
Bird: Barn owl
Bird: Barn swallow
Bird: Bee-eater
Bird: Bittern
Bird: Blackbird
Bird: Bluebird
Bird: Blue-gray tanager
Bird: Bobolinks
Bird: Bohemian waxwing
Bird: Boobies
Bird: Burchell starling
Bird: Canary singing
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Bird: Arctic tern
Arctic tern; nests in the far north and migrates to the Antarctic region in the autumn
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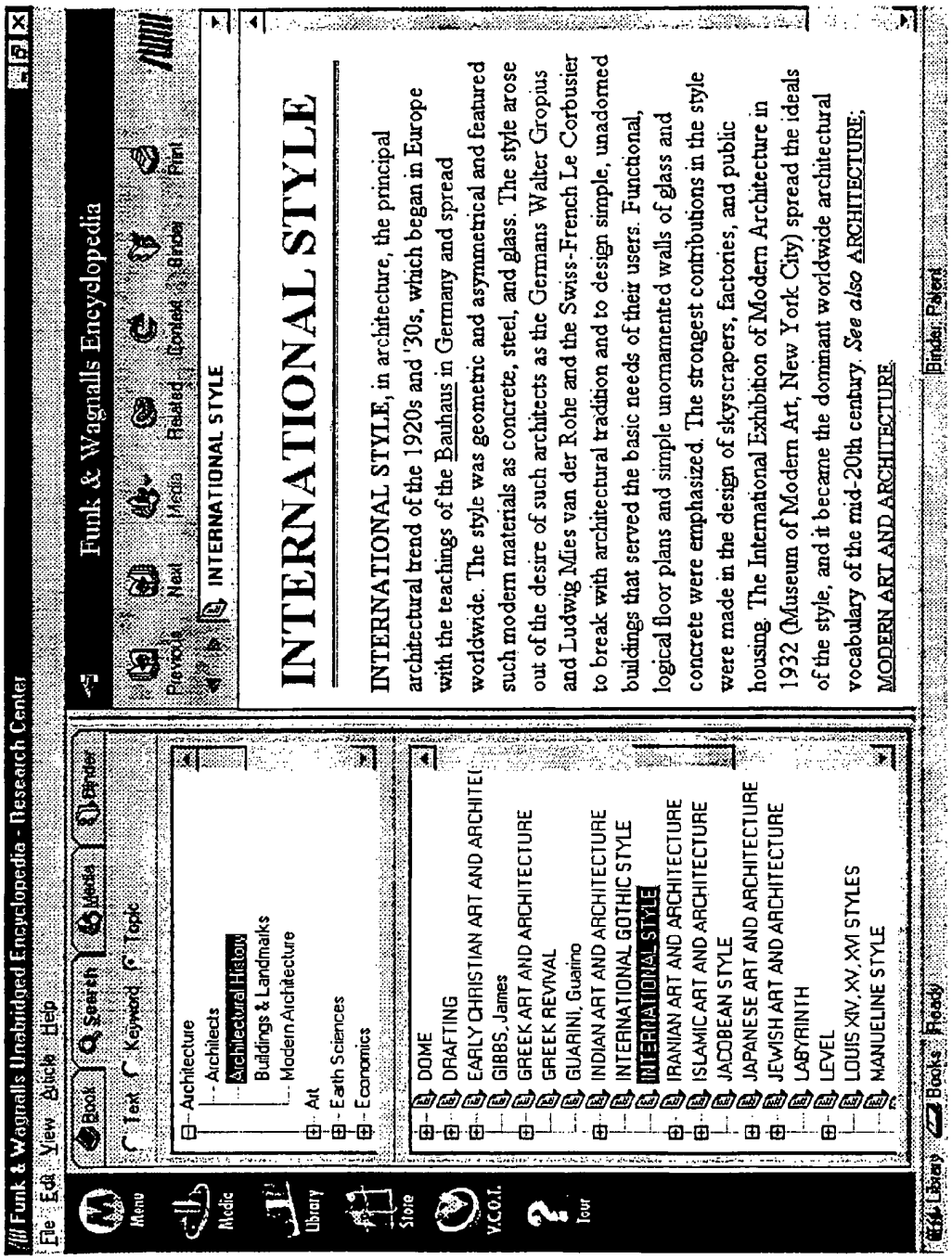
Fig. 17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DRAFTING
EARLY CHRISTIAN ART AND ARCHITEC
GIBBS, James
GREEK ART AND ARCHITECTURE
GREEK REVIVAL
GUARINI, Guarino
INDIAN ART AND ARCHITECTURE
INTERNATIONAL GOTHIC STYLE
INTERNATIONAL STYLE
IRANIAN ART AND ARCHITECTURE
ISLAMIC ART AND ARCHITECTURE
JACOBEAN STYLE
JAPANESE ART AND ARCHITECTURE
JEWISH ART AND ARCHITECTURE
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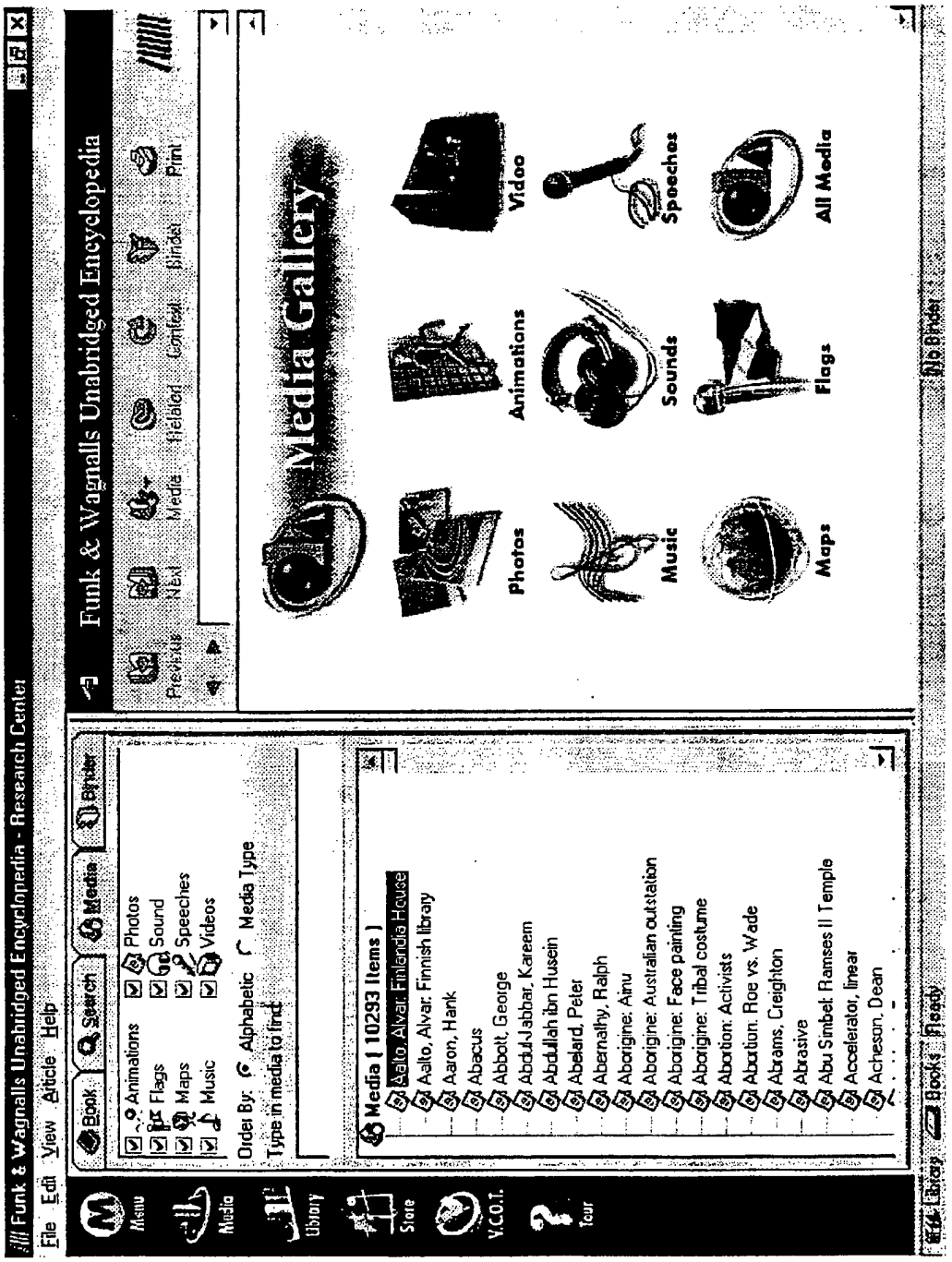
INTERNATIONAL STYLE
INTERNATIONAL STYLE
INTERNATIONAL STYLE, in architecture, the principal architectural trend of the 1920s and '30s, which began in Europe with the teachings of the Bauhaus in Germany and spread worldwide. The style was geometric and asymmetrical and featured such modern materials as concrete, steel, and glass. The style arose out of the desire of such architects as the Germans Walter Gropius and Ludwig Mies van der Rohe and the Swiss-French Le Corbusier to break with architectural tradition and to design simple, unadorned buildings that served the basic needs of their users. Functional, logical floor plans and simple unornamented walls of glass and concrete were emphasized. The strongest contributions in the style were made in the design of skyscrapers, factories, and public housing. The International Exhibition of Modern Architecture in 1932 (Museum of Modern Art, New York City) spread the ideals of the style, and it became the dominant worldwide architectural vocabulary of the mid-20th century. See also ARCHITECTURE; MODERN ART AND ARCHITECTURE.
Binder: Patent

Fig. 18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Abdullah ibn Husein
Abelard, Peter
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Aborigine: Australian outstation
Aborigine: Face painting
Aborigine: Tribal costume
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Abortion: Roe vs. Wade
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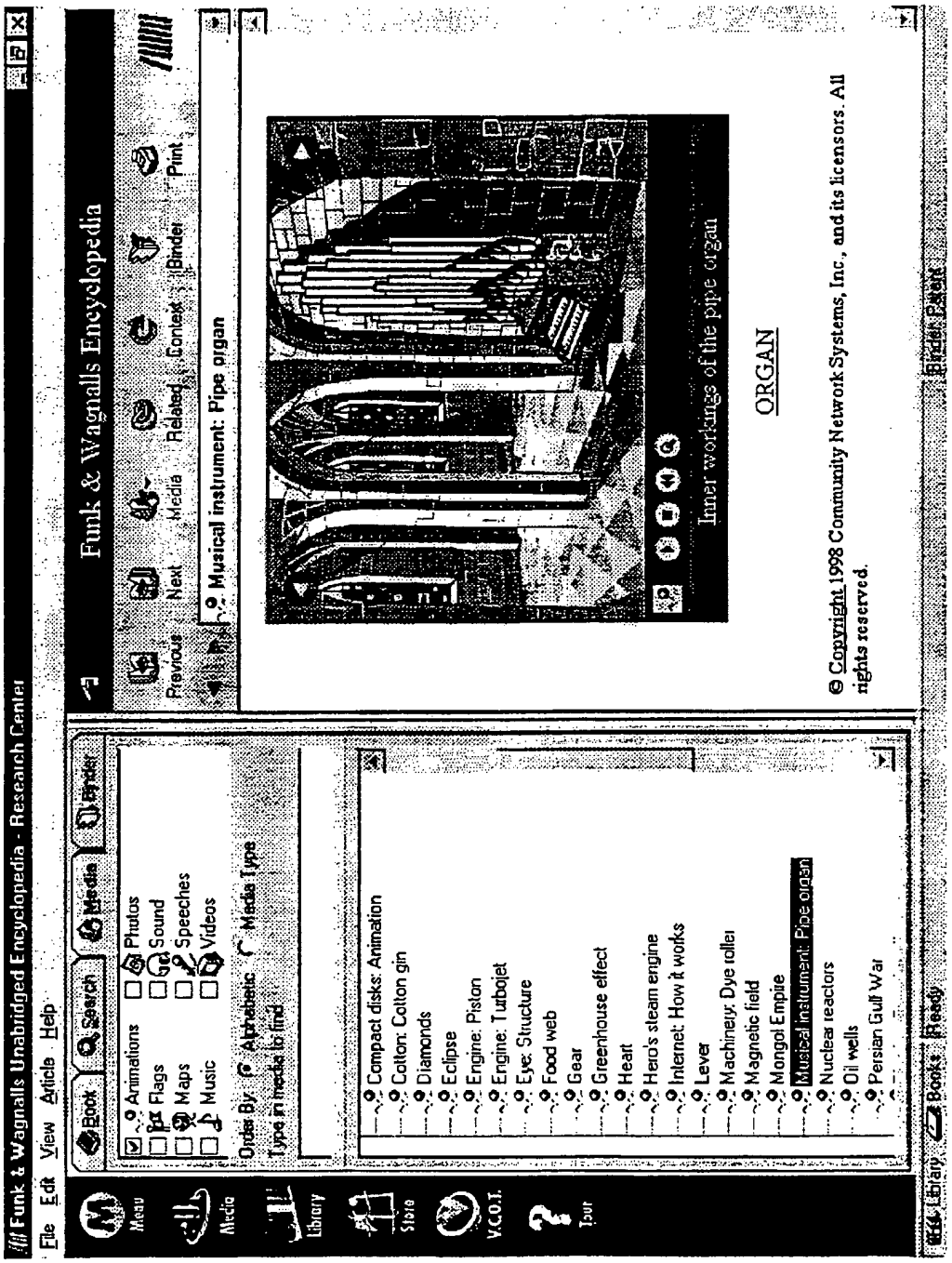
Fig.19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Engine: Turbojet
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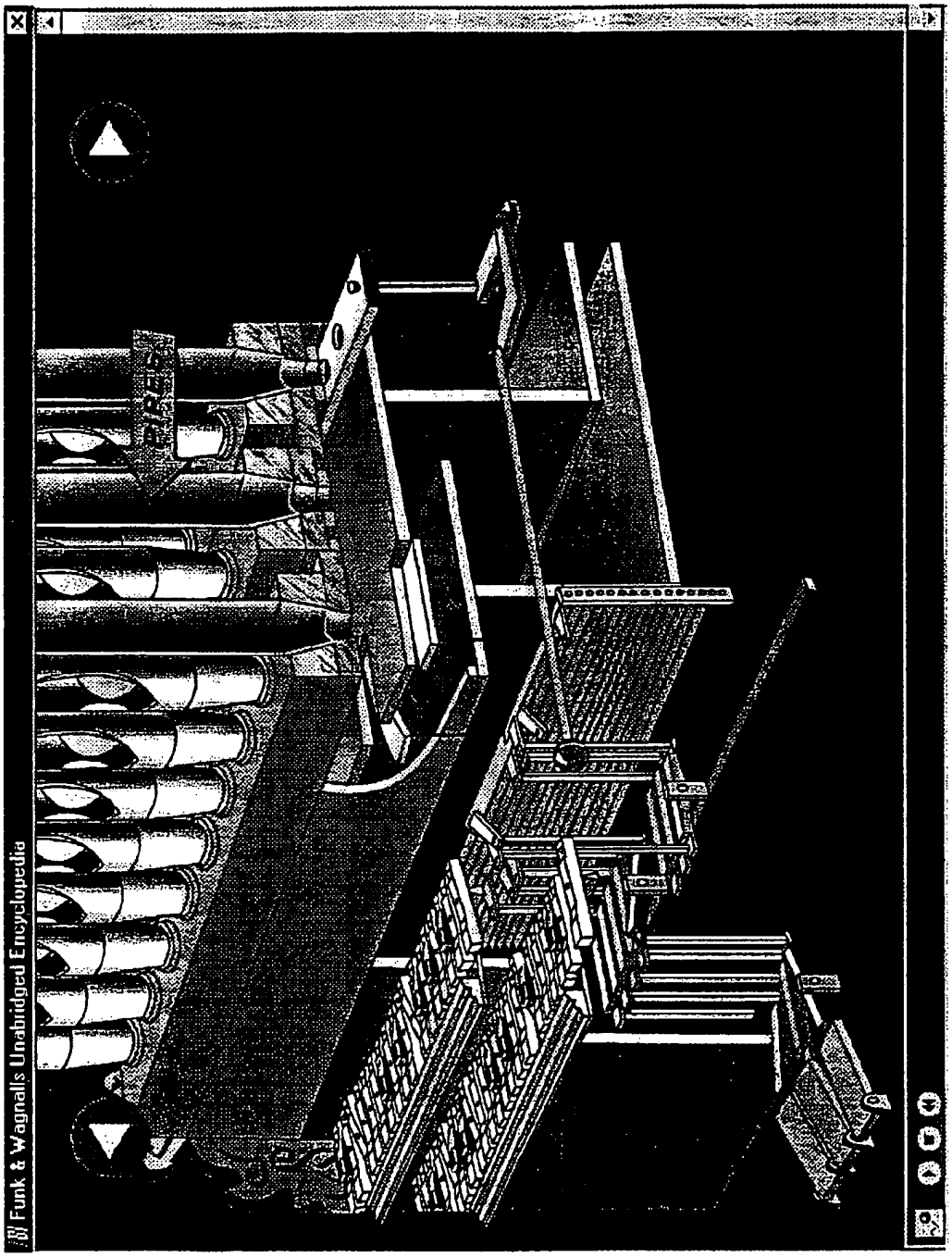
Fig. 20



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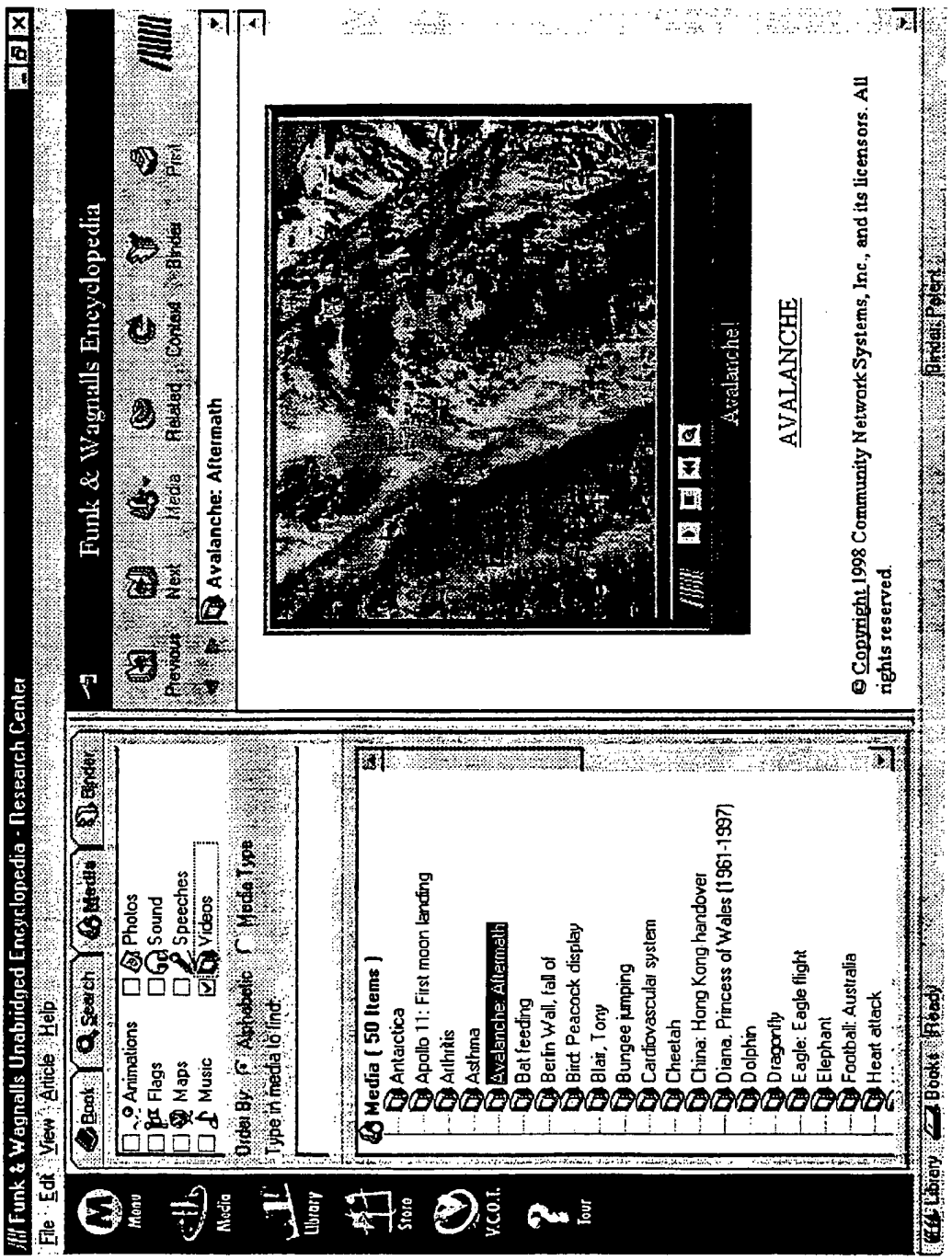
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Asthma
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Blair, Tony
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AVALANCHE
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Fig. 22

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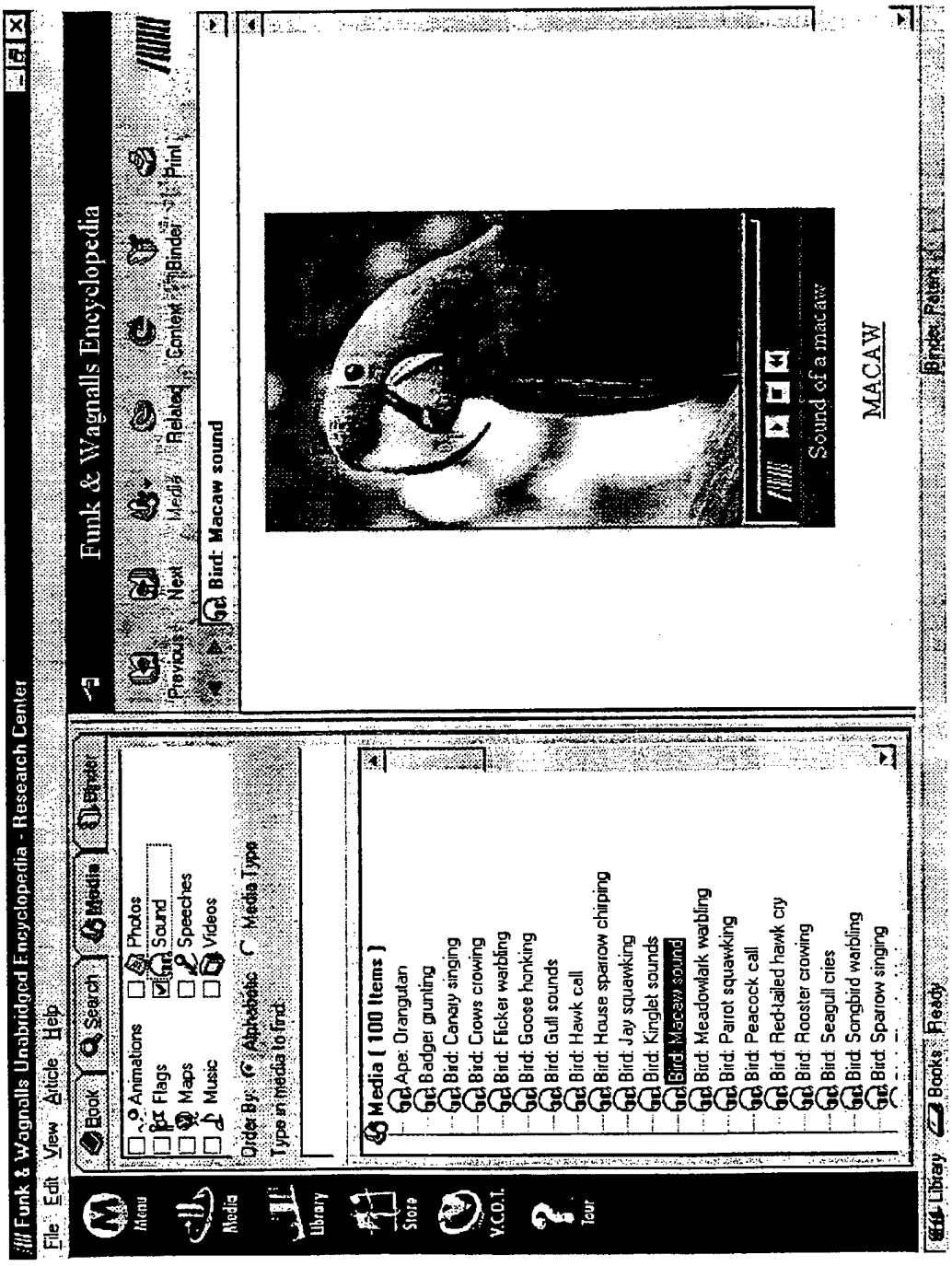
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Bird: Goose honking
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Bird: Kinglet sounds
Bird: Macaw sound
Bird: Meadowlark warbling
Bird: Parrot squawking
Bird: Peacock call
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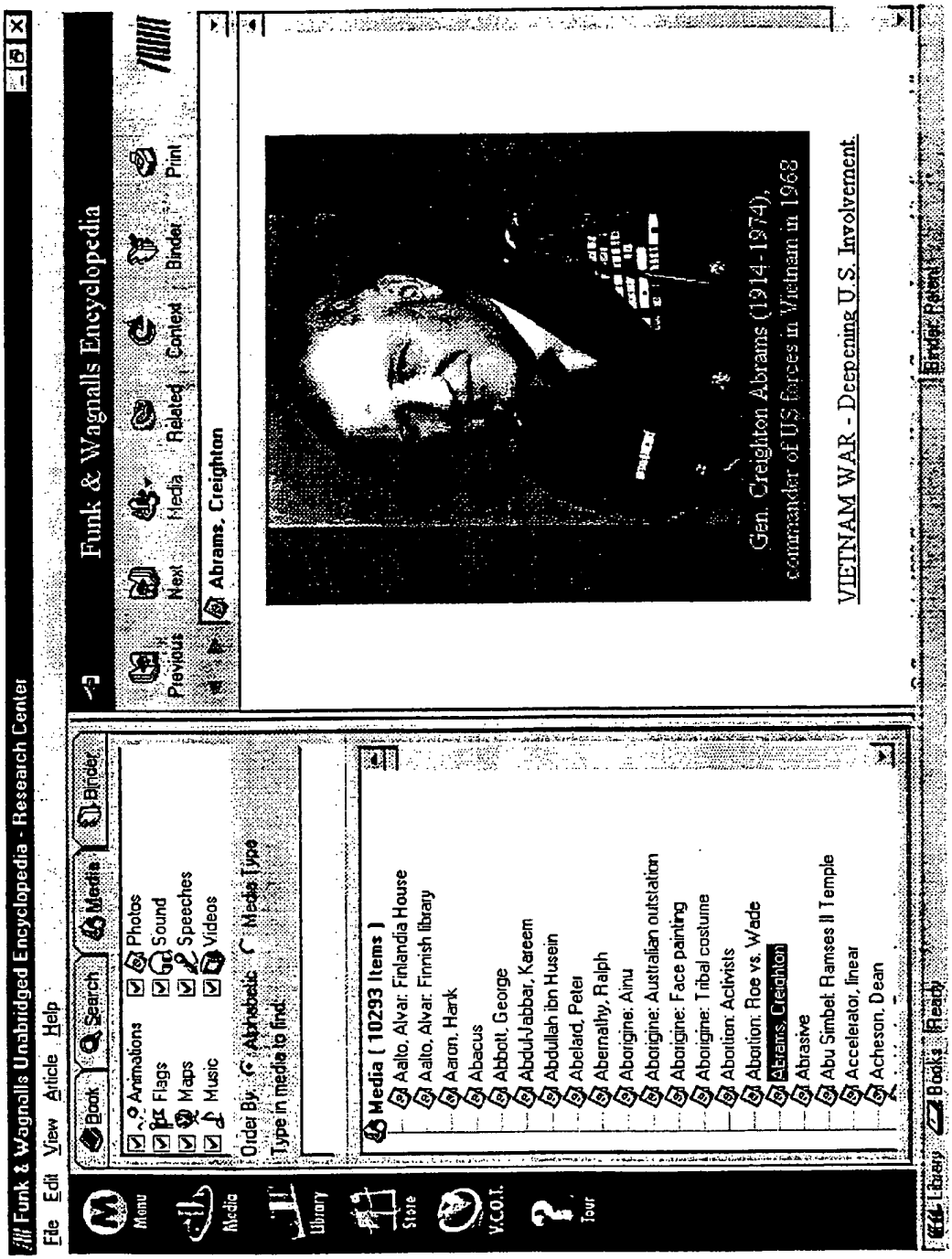
Binder: Paten

Fig.23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Media (10293 Items)
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Abbott, George
Abdul-Jabbar, Kareem
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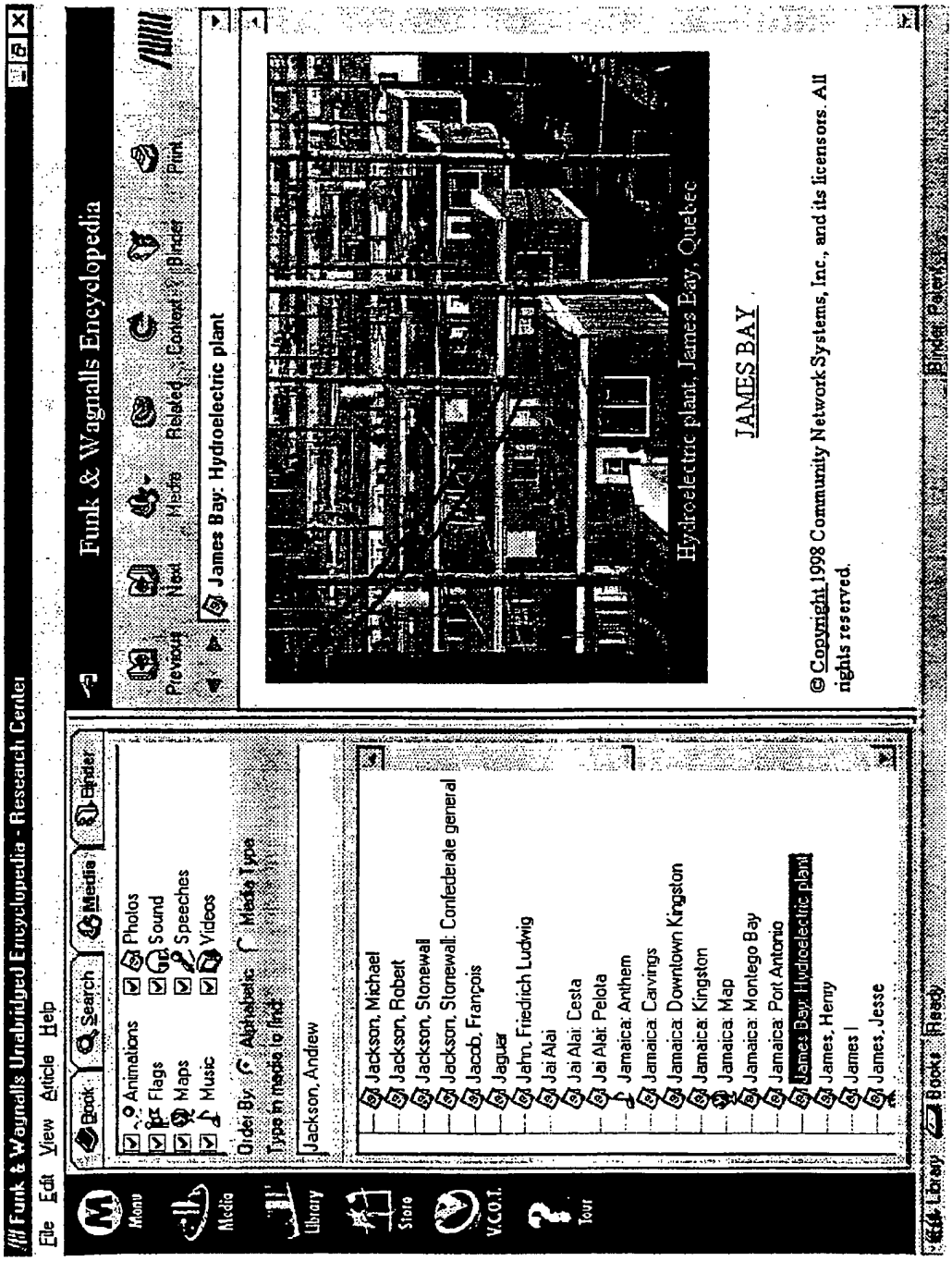
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Jackson, Andrew
Jackson, Michael
Jackson, Robert
Jackson, Stonewall
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Jacob, François
Jaguar
Jahn, Friedrich Ludwig
Jai Alai
Jai Alai: Cesta
Jai Alai: Pelota
Jamaica: Anthem
Jamaica: Carvings
Jamaica: Downtown Kingston
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James Bay: Hydroelectric plant
Hydroelectric plant, James Bay, Quebec
JAMES BAY
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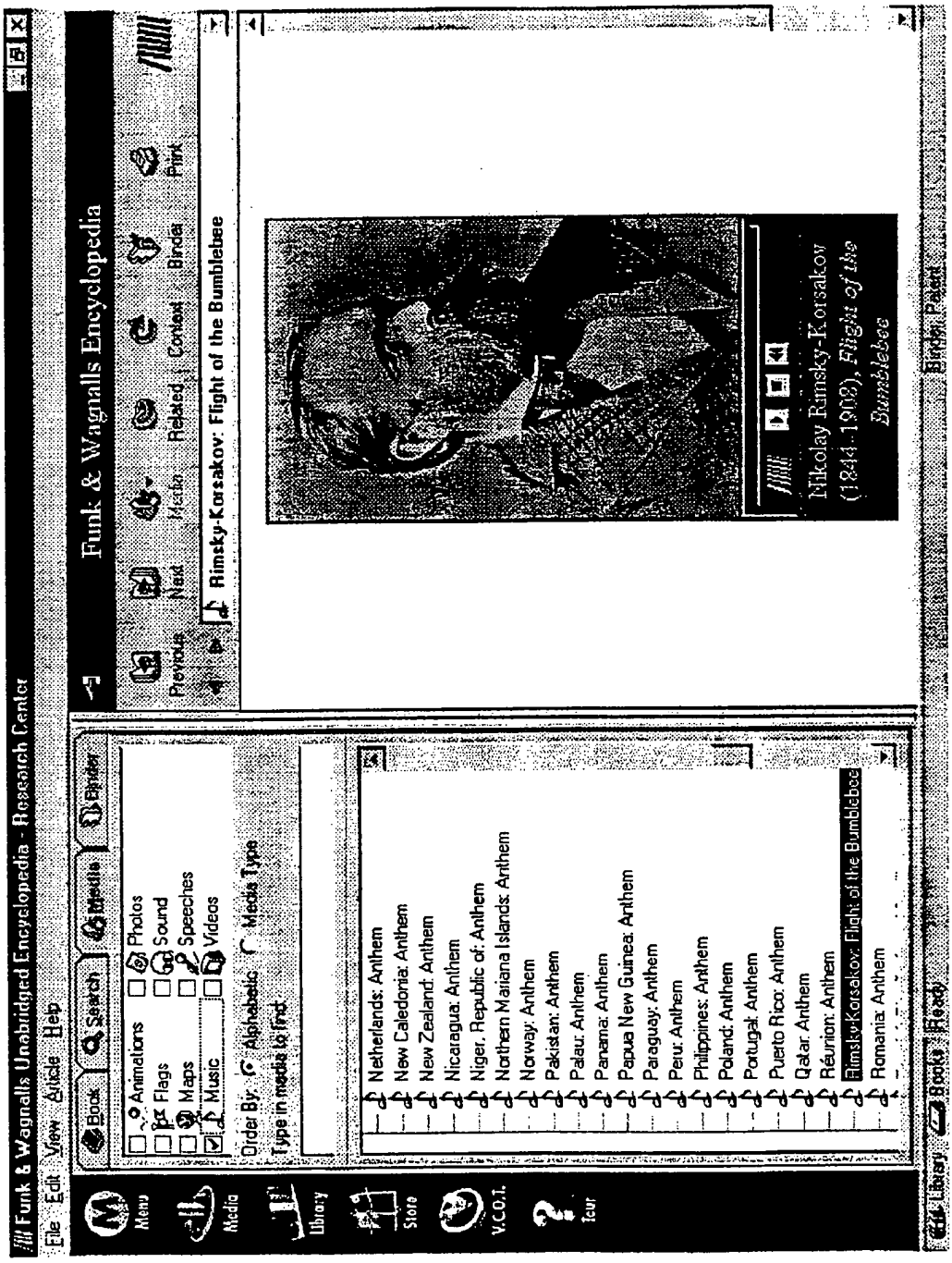
Fig. 25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New Zealand: Anthem
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Northern Mariana Islands: Anthem
Norway: Anthem
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Papua New Guinea: Anthem
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Philippines: Anthem
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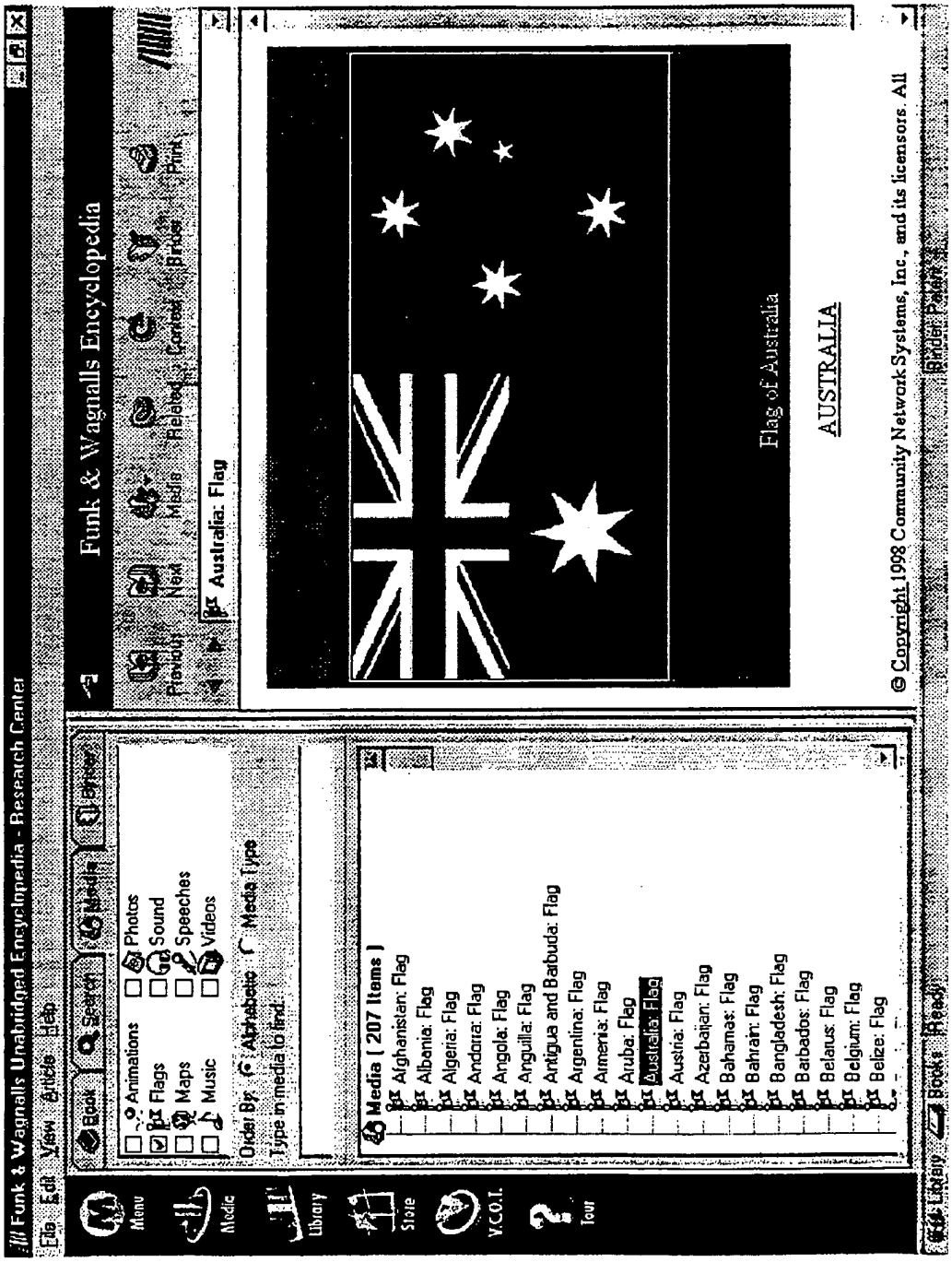
Fig. 26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Algeria: Flag
Andorra: Flag
Angola: Flag
Anguilla: Flag
Antigua and Barbuda: Flag
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Armenia: Flag
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Fig. 27

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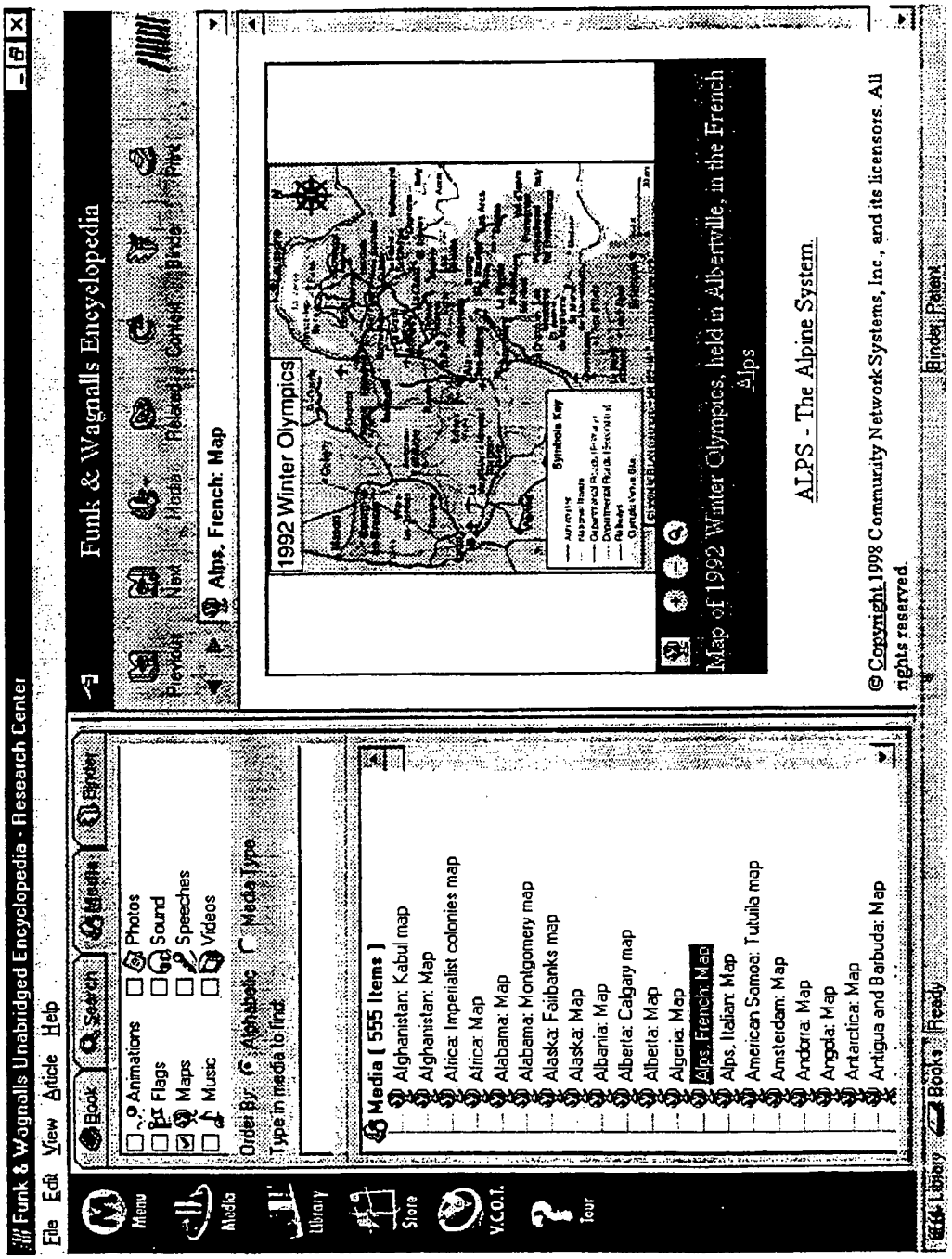
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Africa: Map
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Alabama: Montgomery map
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Map of 1992 Winter Olympics, held in Albertville, in the French Alps
ALPS - The Alpine System.
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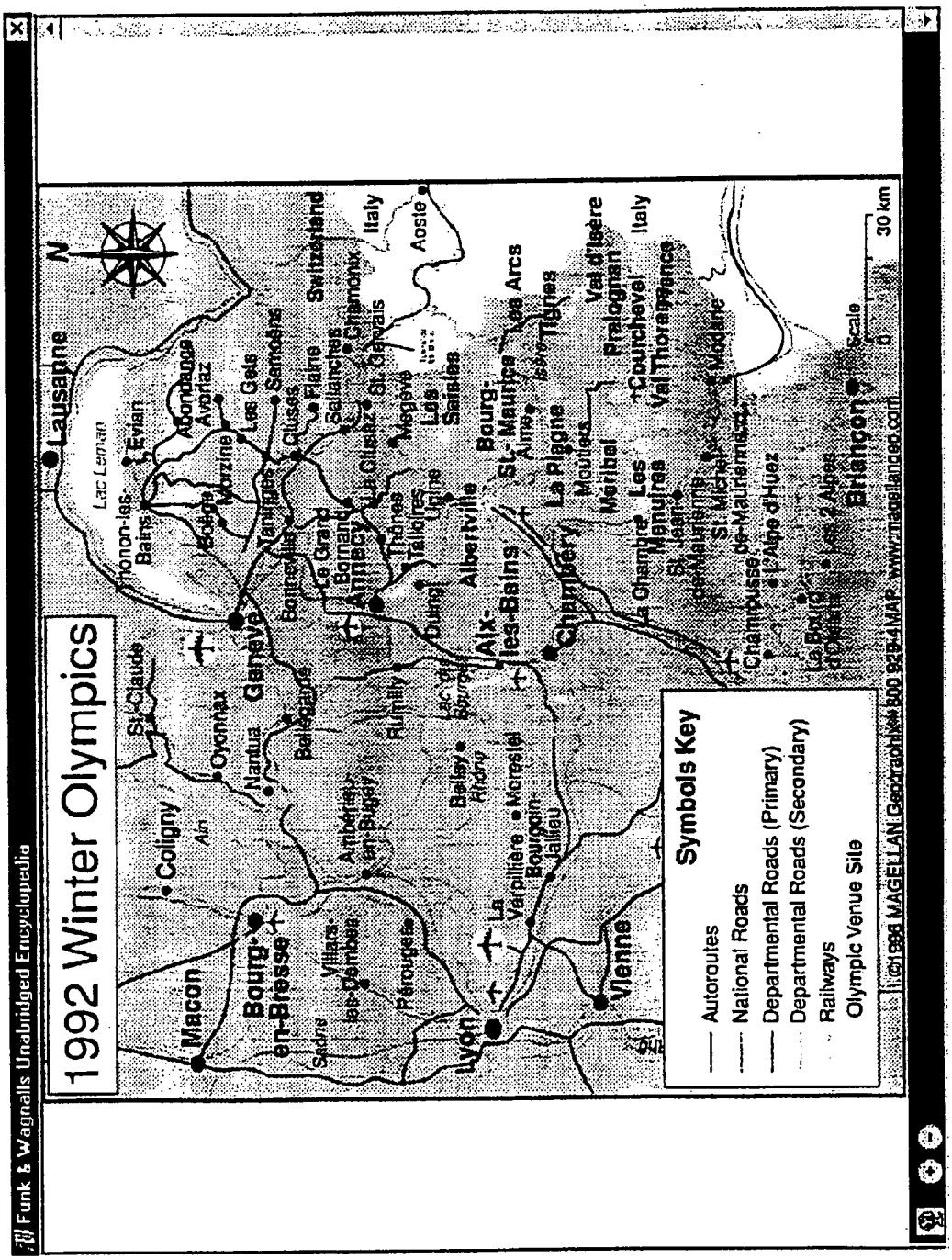
Fig. 28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Lyon
La Varpillière
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30 km
Symbols Key
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Departmental Roads (Primary)
Departmental Roads (Secondary)
Railways
Olympic Venue Site
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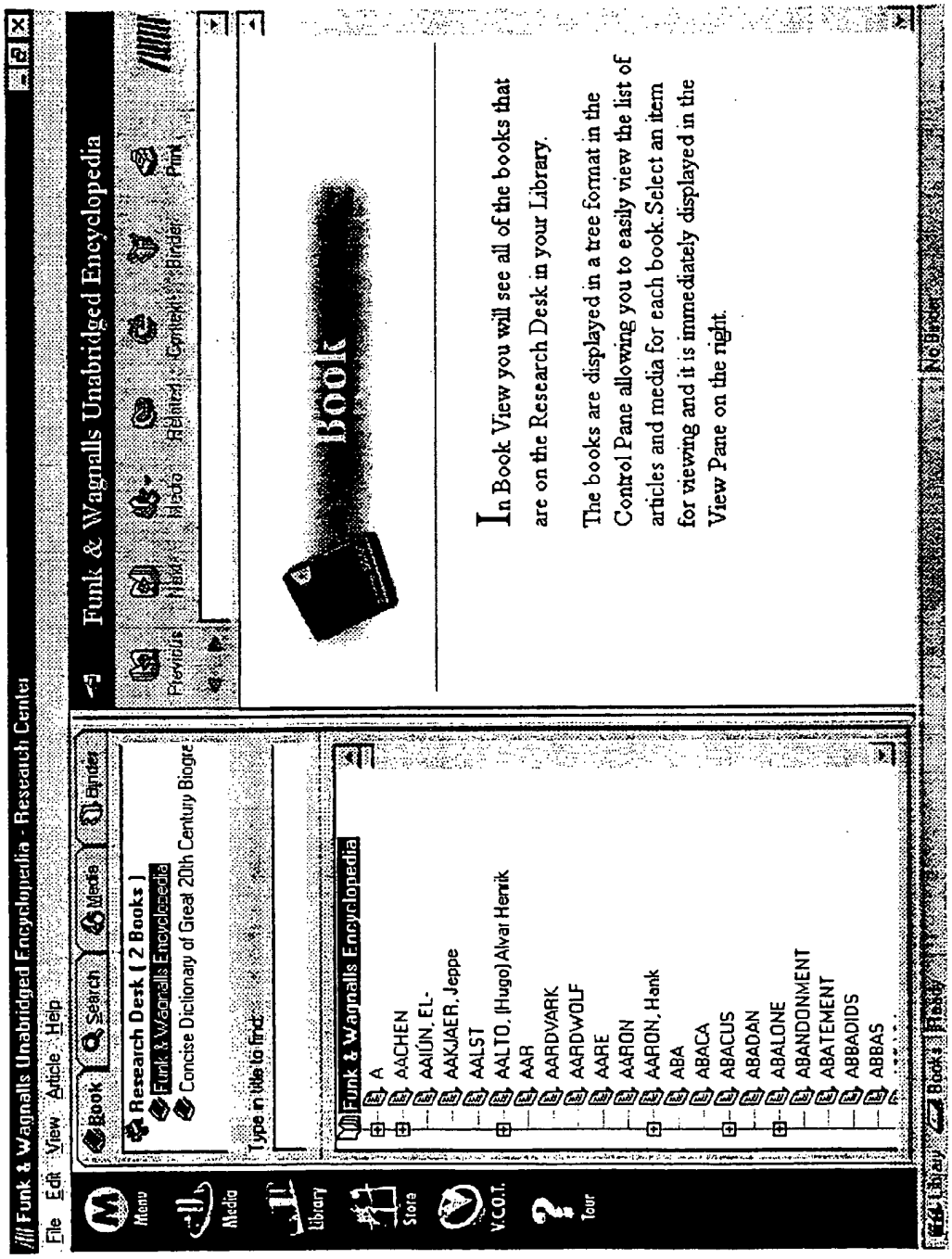
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AARDVARK
AARDWOLF
AARE
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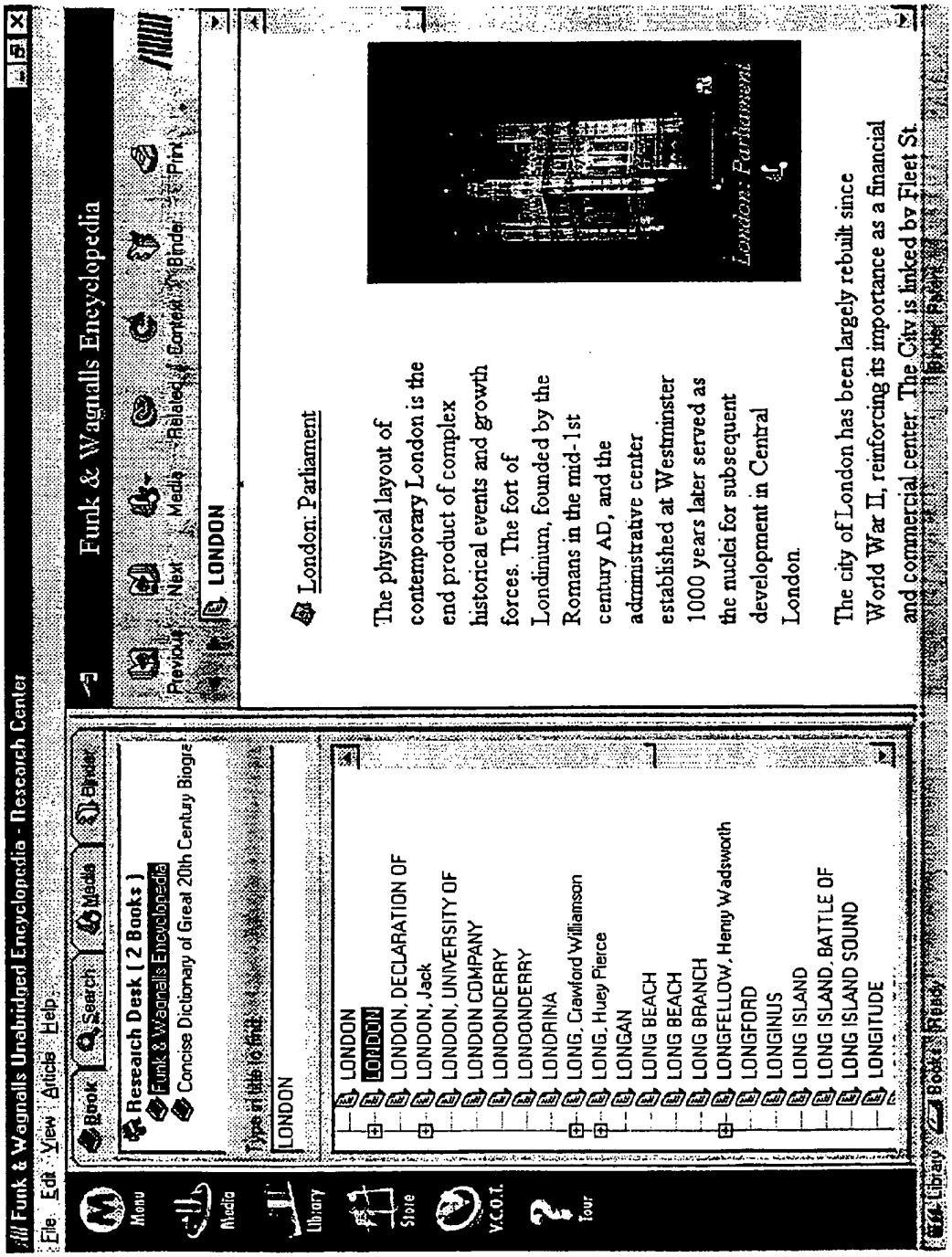
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LONDONDERRY
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LONG, Crawford Williamson
LONG, Huey Pierce
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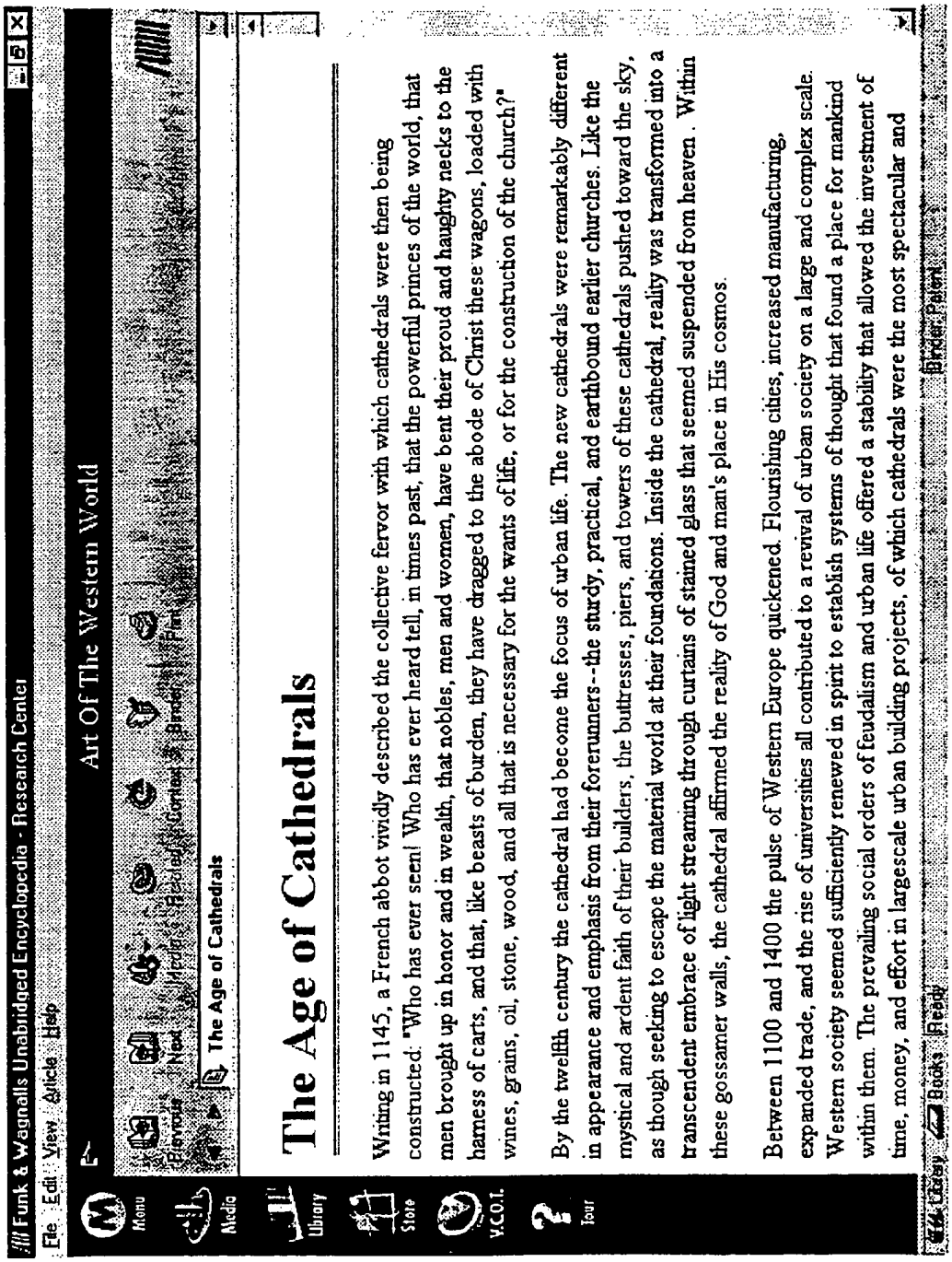
LONDON
London: Parliament
The physical layout of contemporary London is the end product of complex historical events and growth forces. The fort of Londinium, founded by the Romans in the mid-1st century AD, and the administrative center established at Westminster 1000 years later served as the nuclei for subsequent development in Central London.
London: Parliament
The city of London has been largely rebuilt since World War II, reinforcing its importance as a financial and commercial center. The City is linked by Fleet St.

Fig. 31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The Age of Cathedrals
Writing in 1145, a French abbot vividly described the collective fervor with which cathedrals were then being constructed: "Who has ever seen! Who has ever heard tell, in times past, that the powerful princes of the world, that men brought up in honor and in wealth, that nobles, men and women, have bent their proud and haughty necks to the harness of carts, and that, like beasts of burden, they have dragged to the abode of Christ these wagons, loaded with wines, grains, oil, stone, wood, and all that is necessary for the wants of life, or for the construction of the church?"
By the twelfth century the cathedral had become the focus of urban life. The new cathedrals were remarkably different in appearance and emphasis from their forerunners--the sturdy, practical, and earthbound earlier churches. Like the mystical and ardent faith of their builders, the buttresses, piers, and towers of these cathedrals pushed toward the sky, as though seeking to escape the material world at their foundations. Inside the cathedral, reality was transformed into a transcendent embrace of light streaming through curtains of stained glass that seemed suspended from heaven. Within these gossamer walls, the cathedral affirmed the reality of God and man's place in His cosmos.
Between 1100 and 1400 the pulse of Western Europe quickened. Flourishing cities, increased manufacturing, expanded trade, and the rise of universities all contributed to a revival of urban society on a large and complex scale. Western society seemed sufficiently renewed in spirit to establish systems of thought that found a place for mankind within them. The prevailing social orders of feudalism and urban life offered a stability that allowed the investment of time, money, and effort in largescale urban building projects, of which cathedrals were the most spectacular and
Ready

Fig. 32

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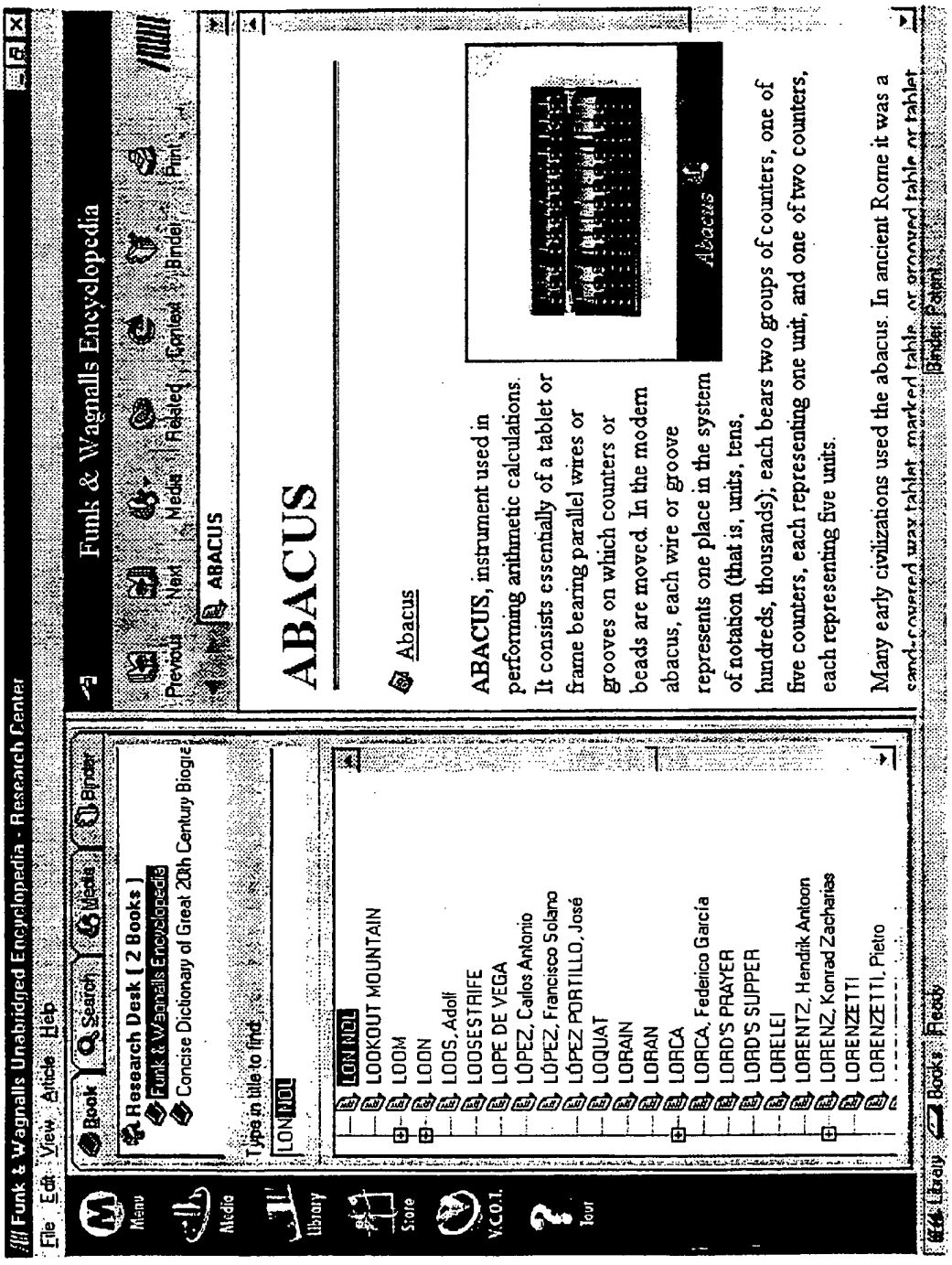

Fig. 33

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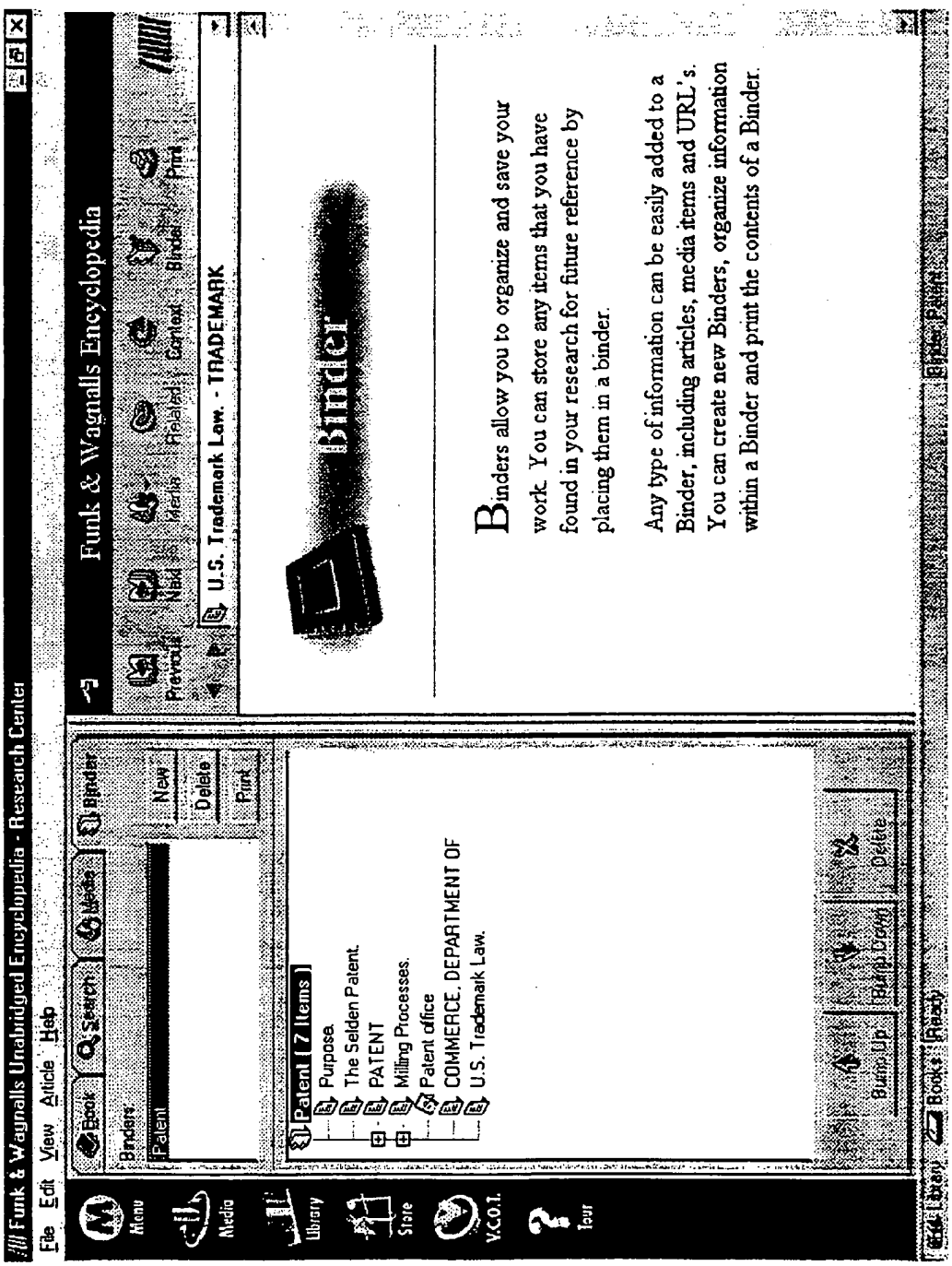
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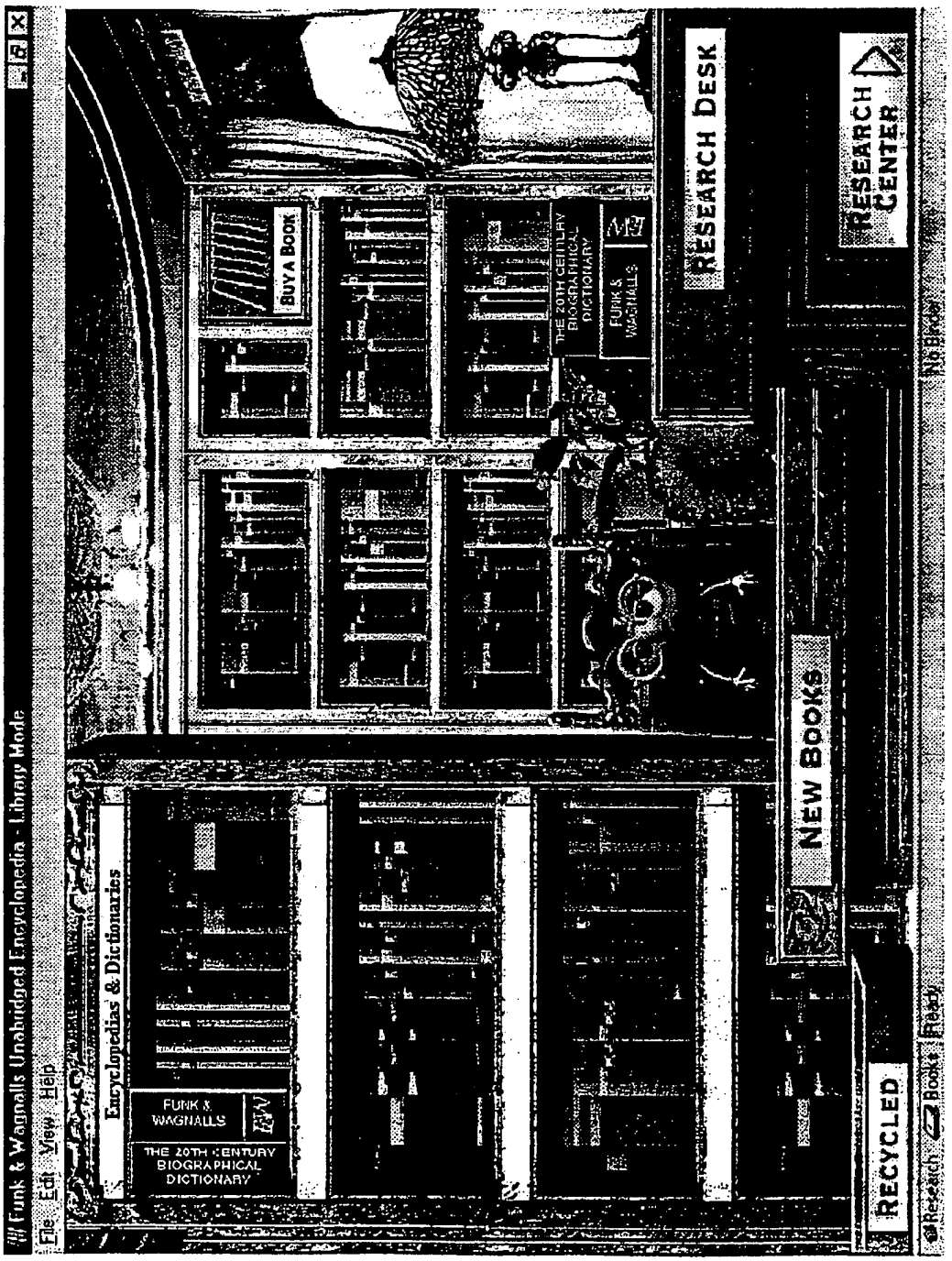
Fig. 34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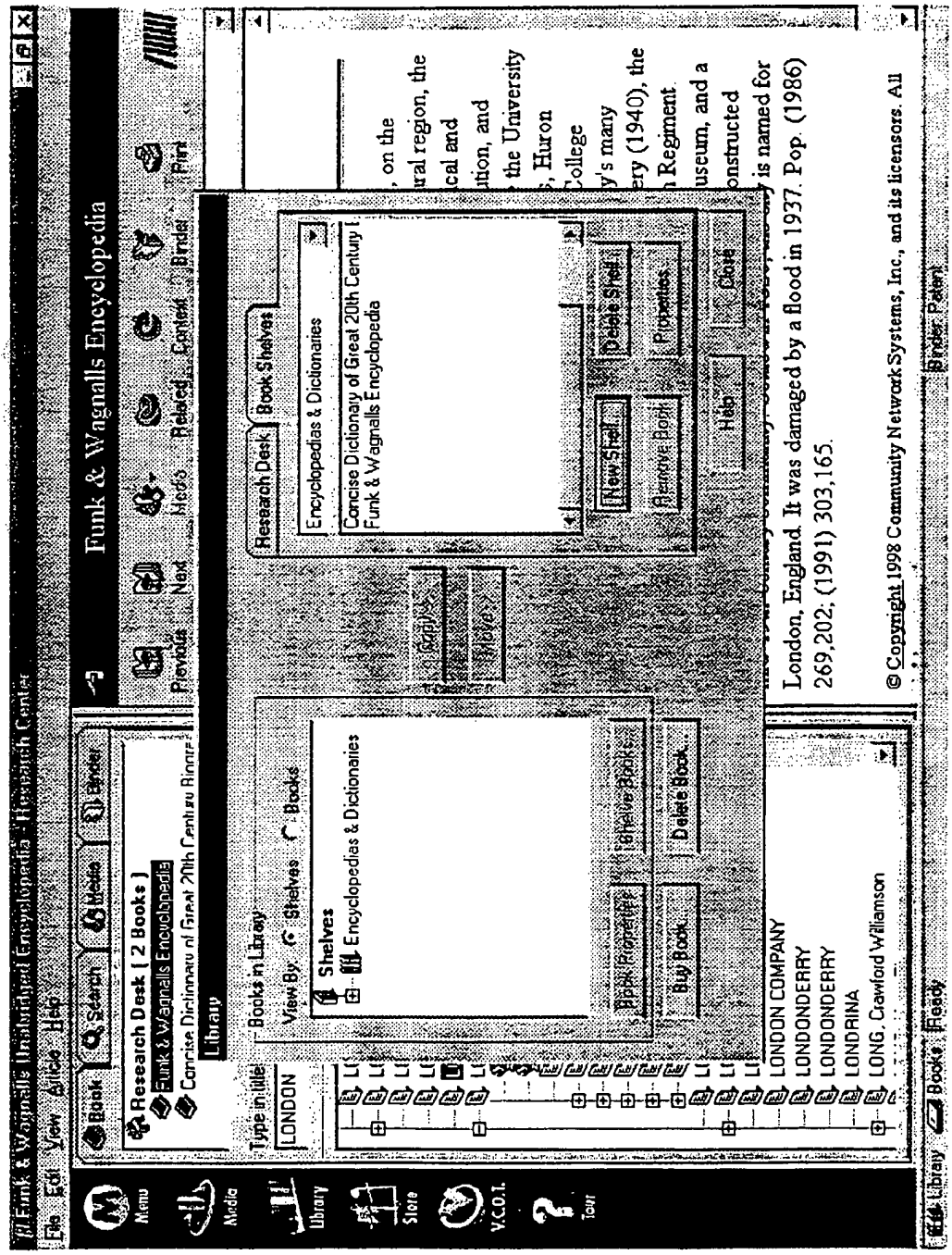
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269,202; (1991) 303,165.
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Fig. 36

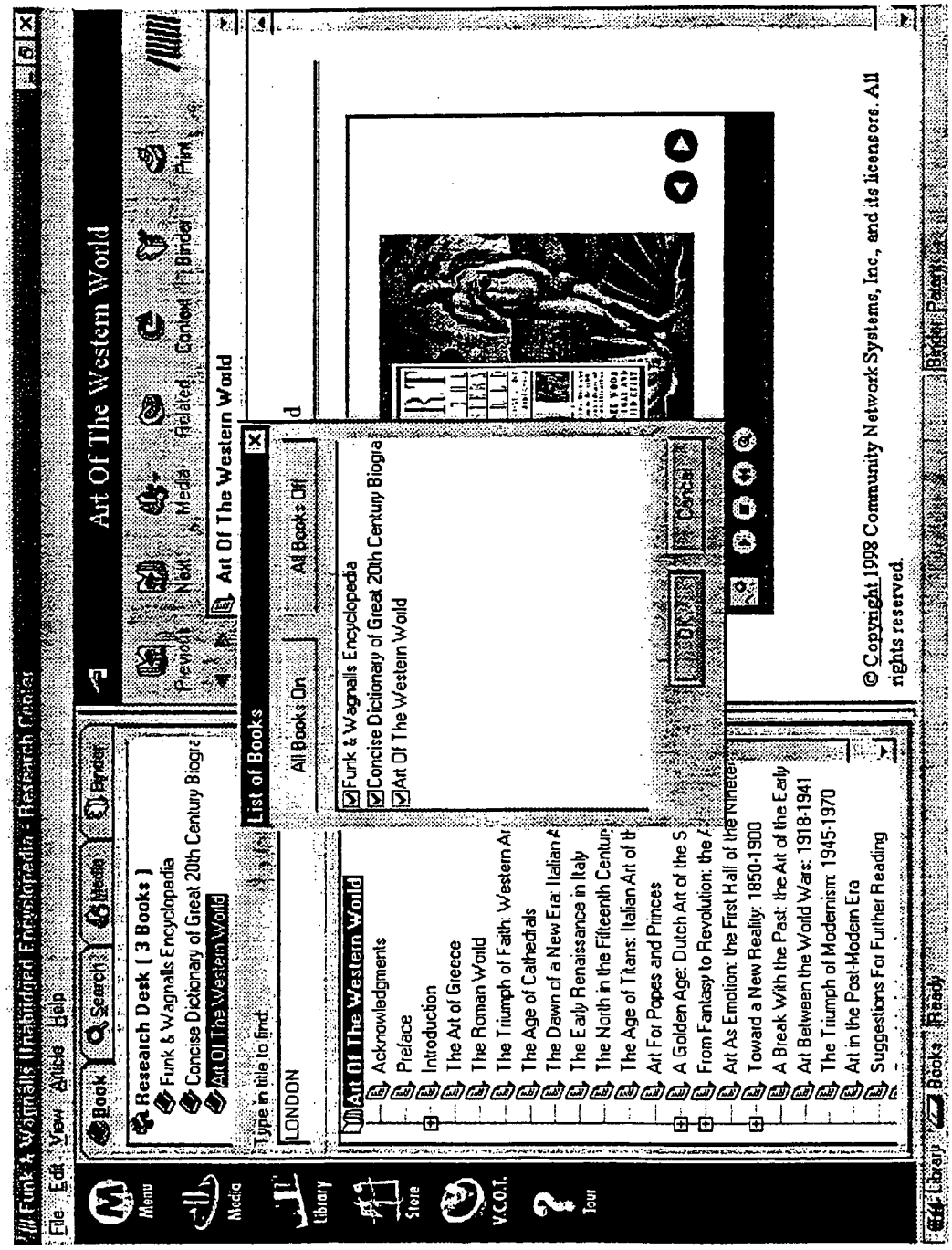
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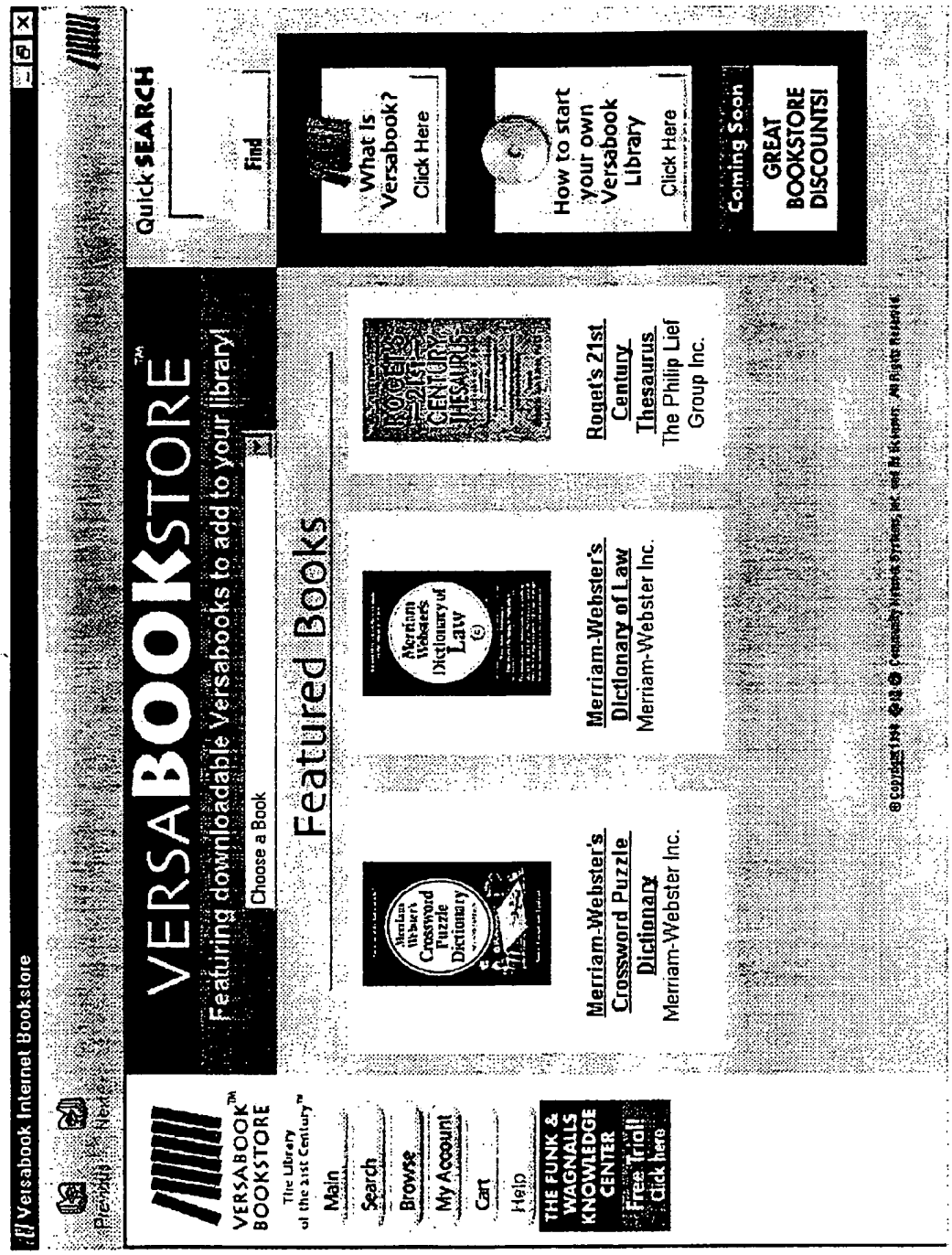
Fig. 37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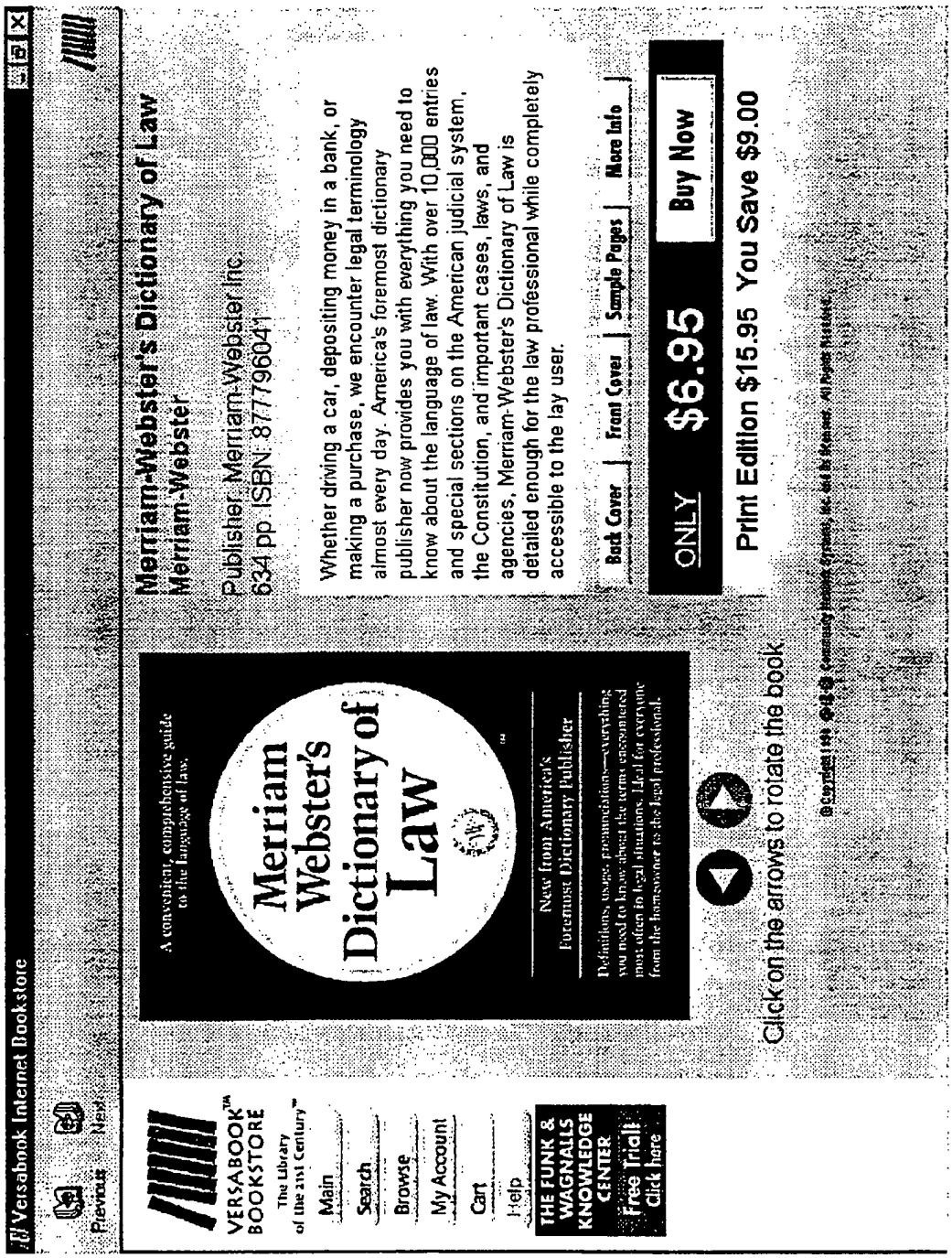
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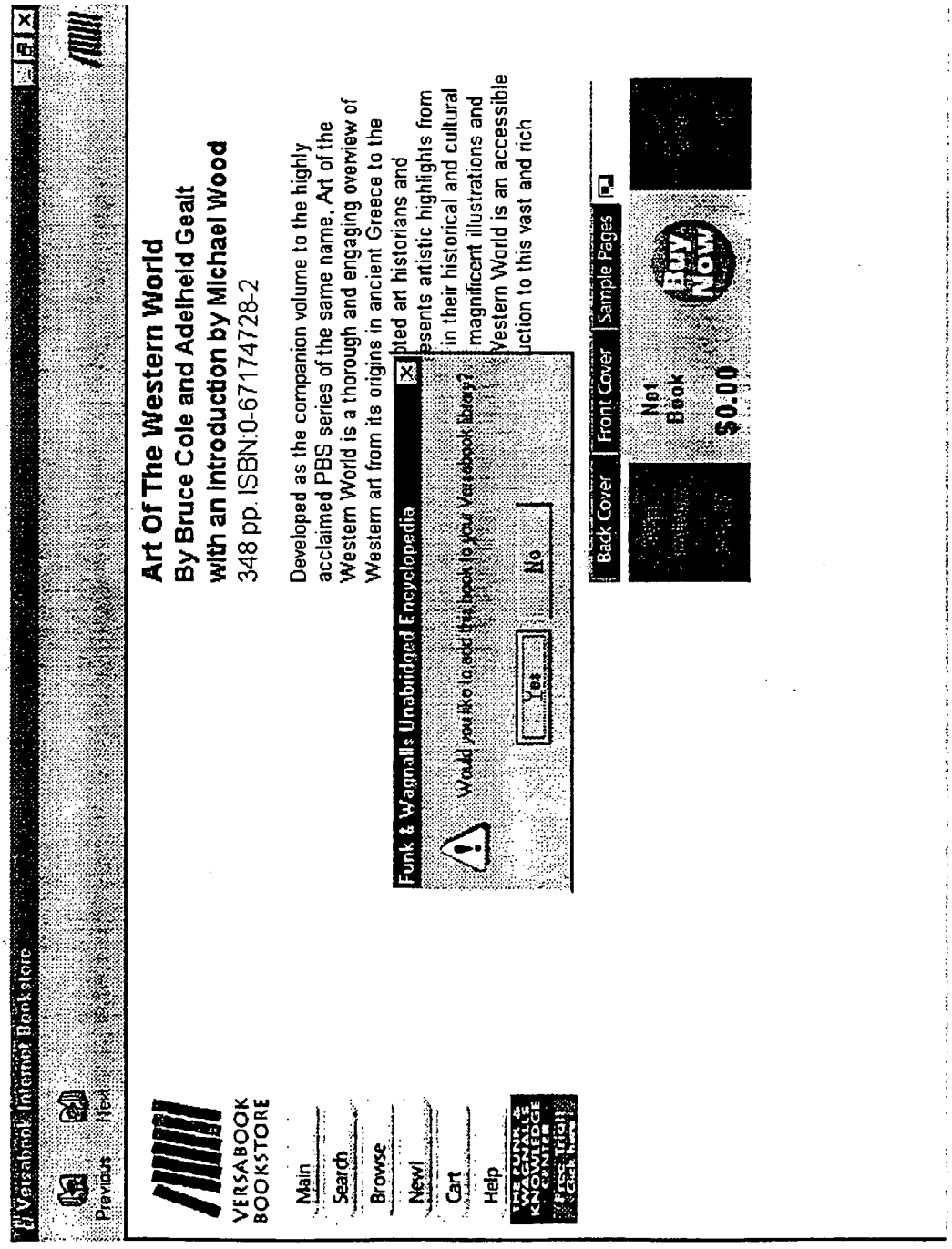
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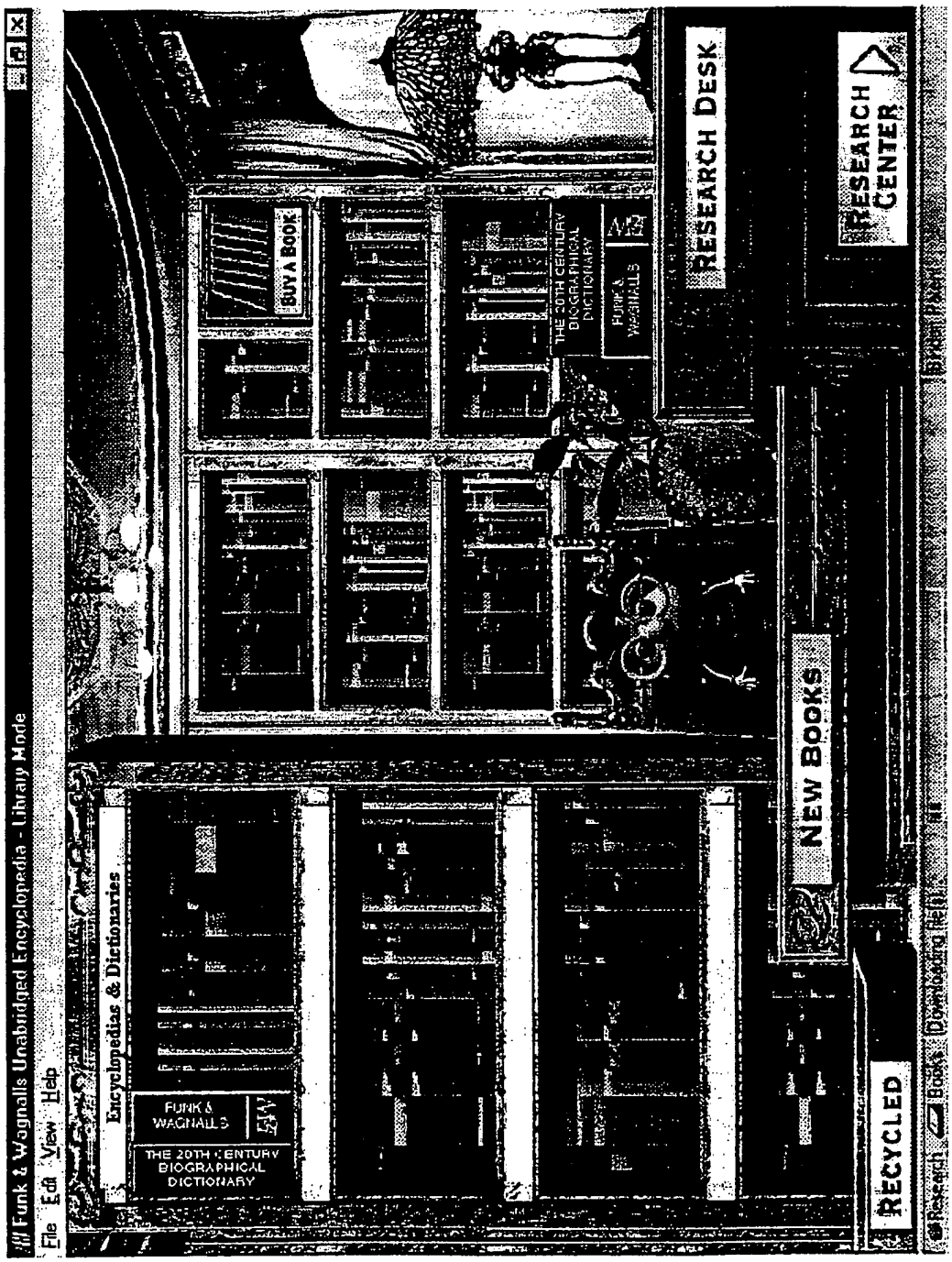
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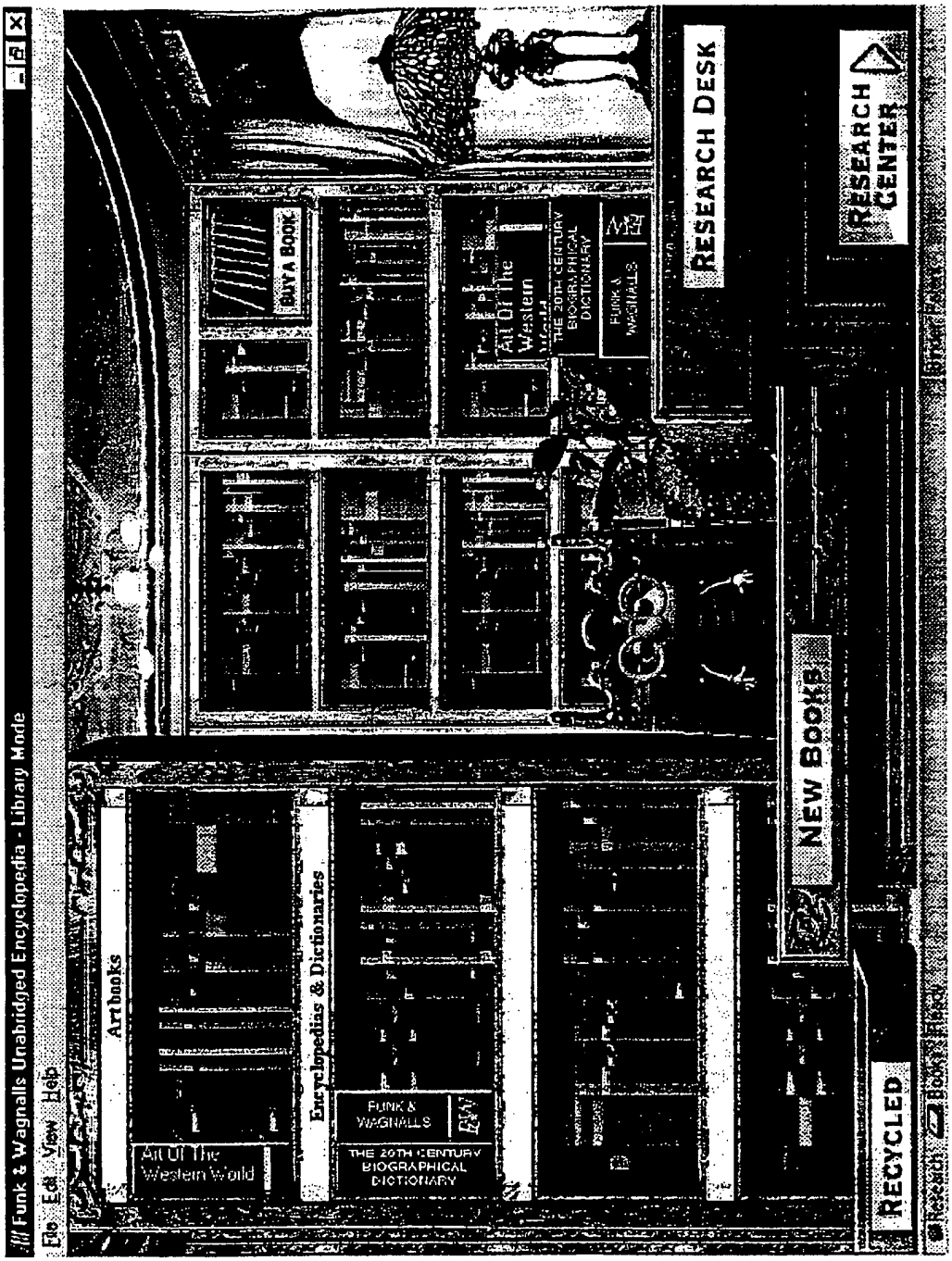
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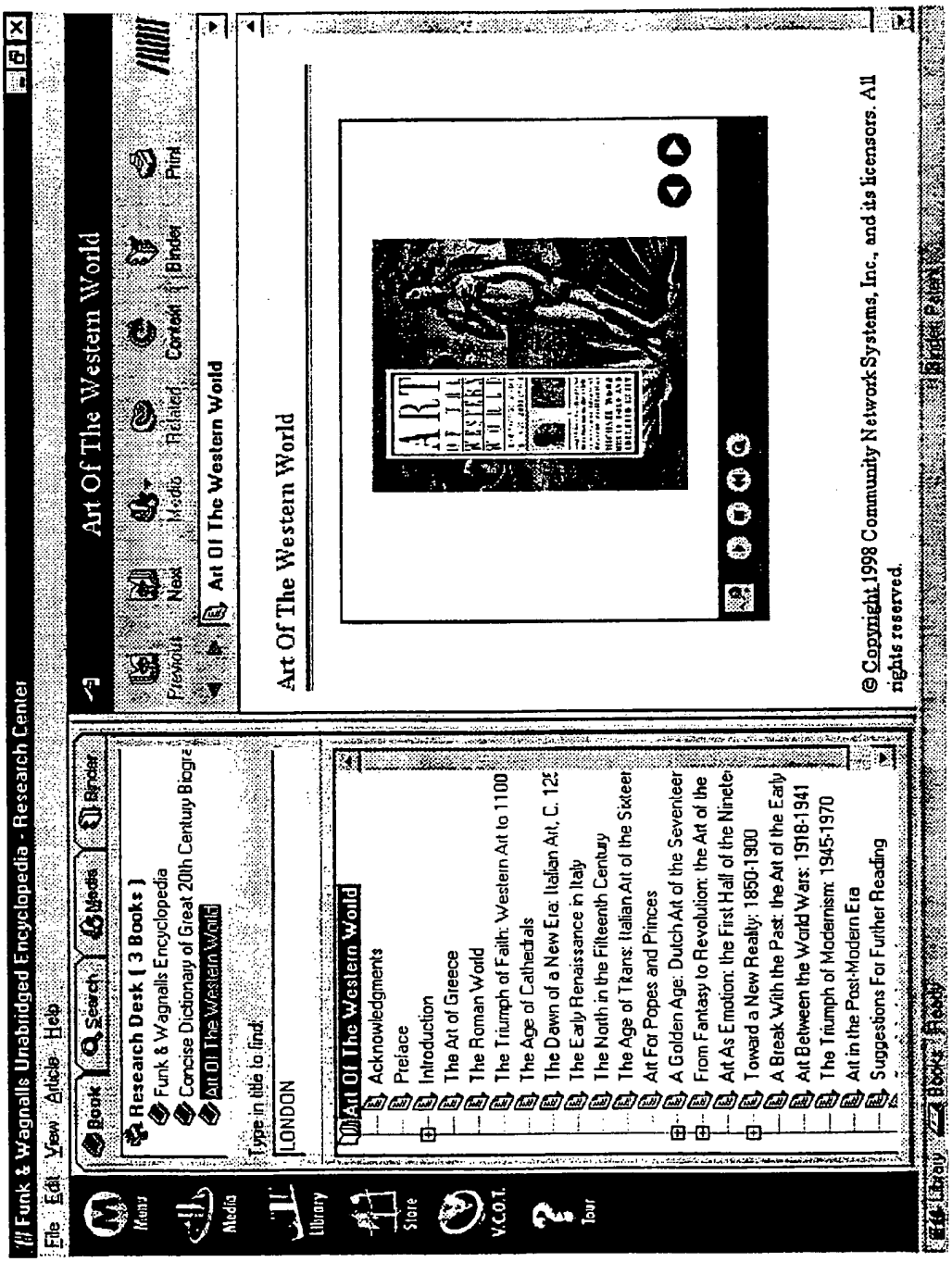
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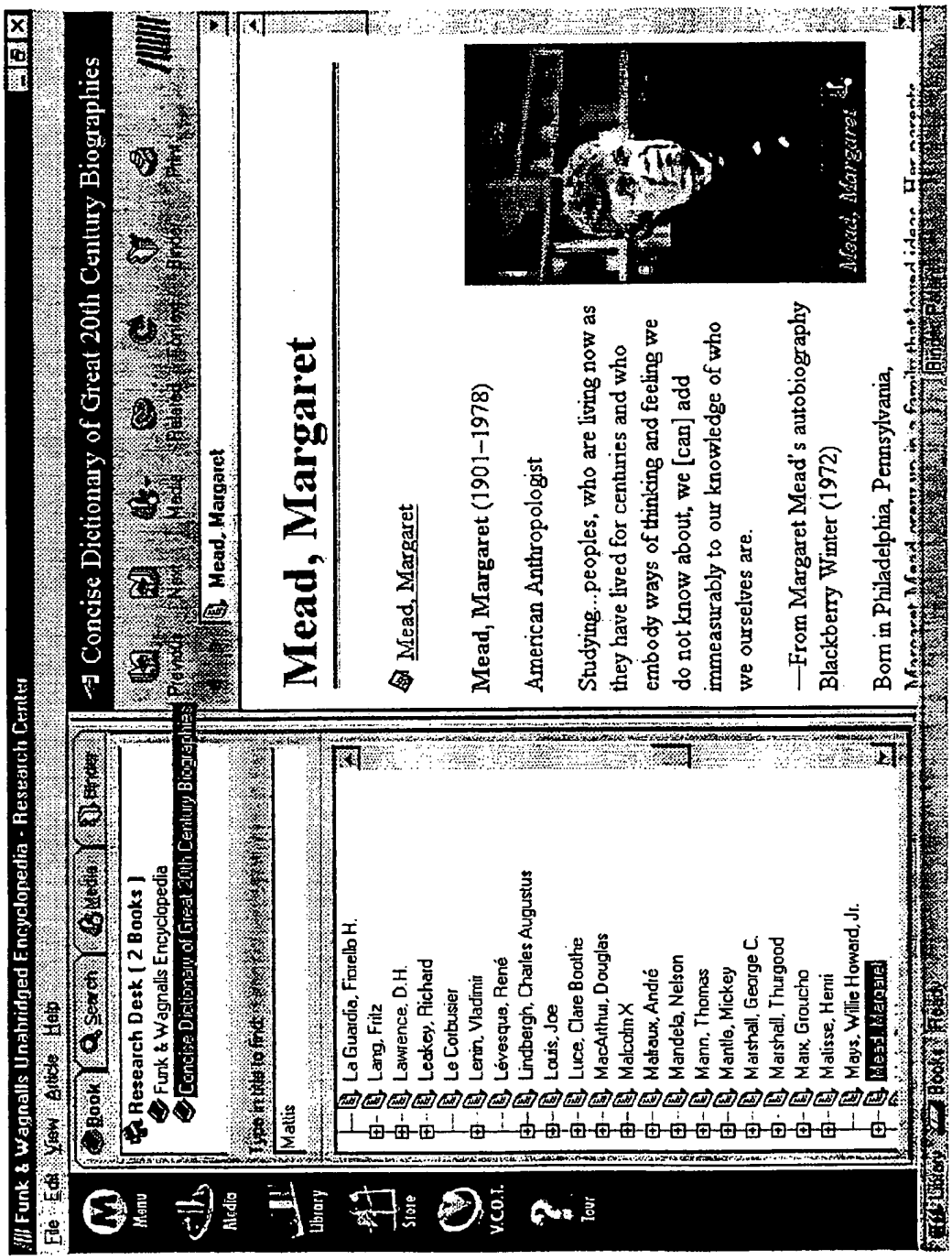
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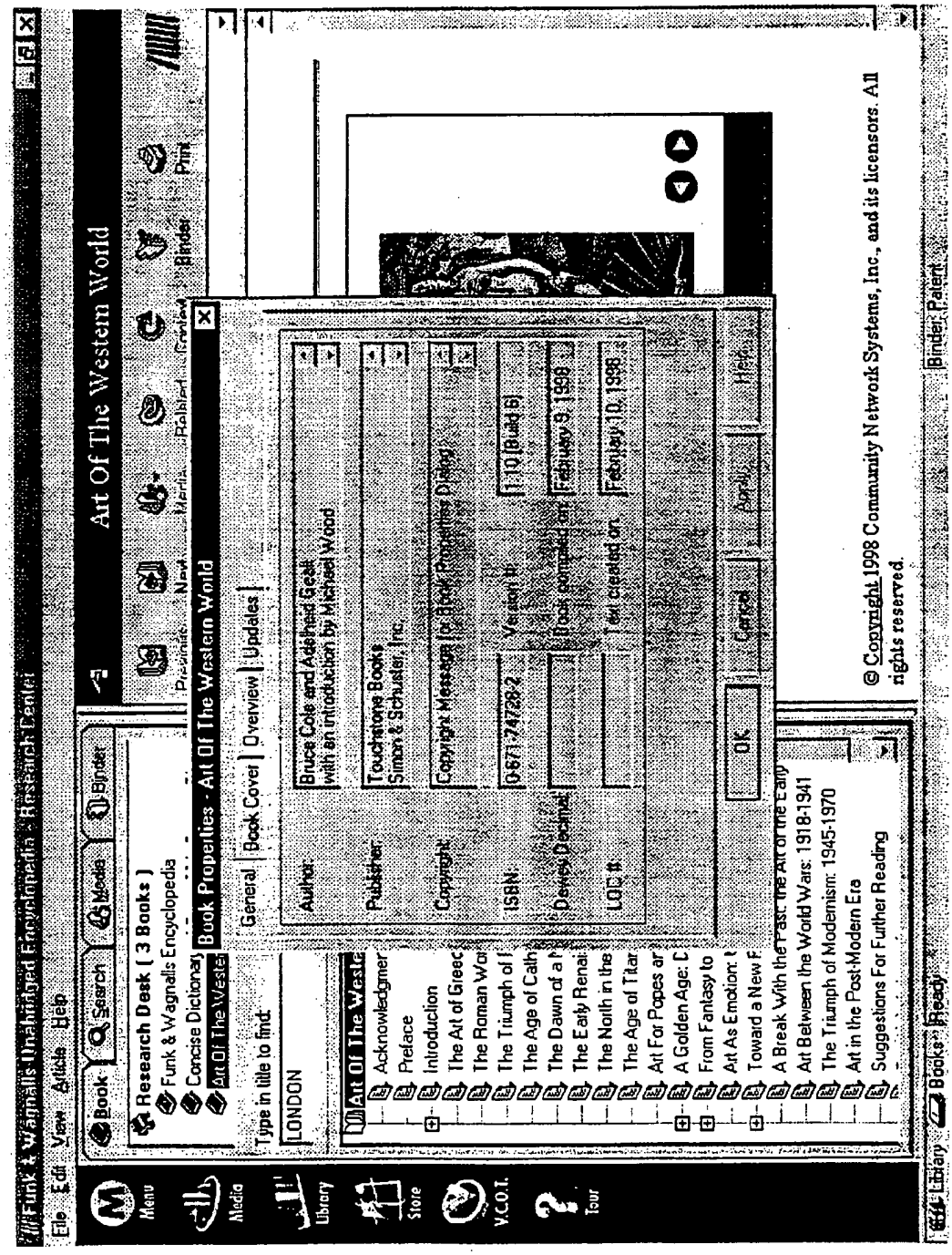
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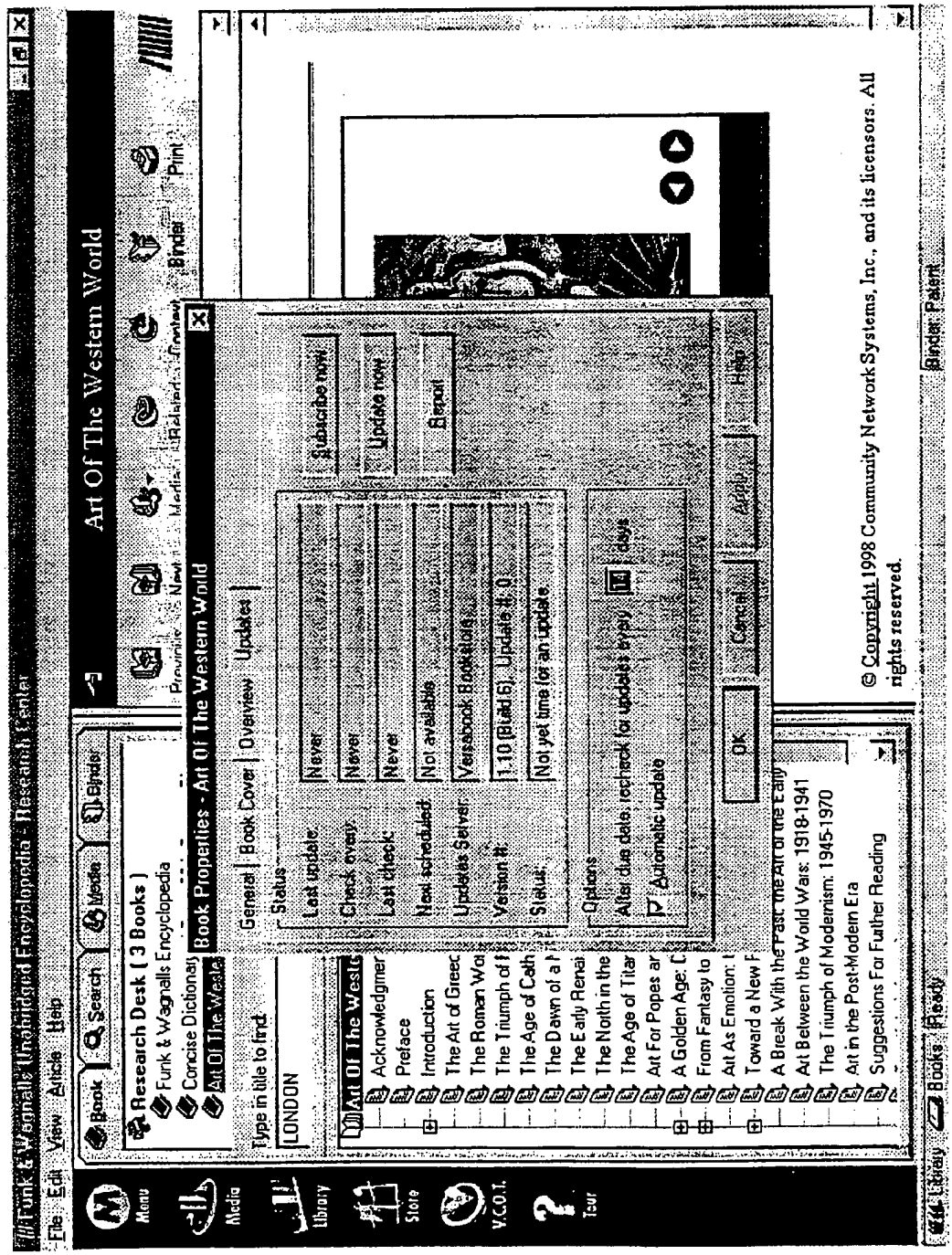
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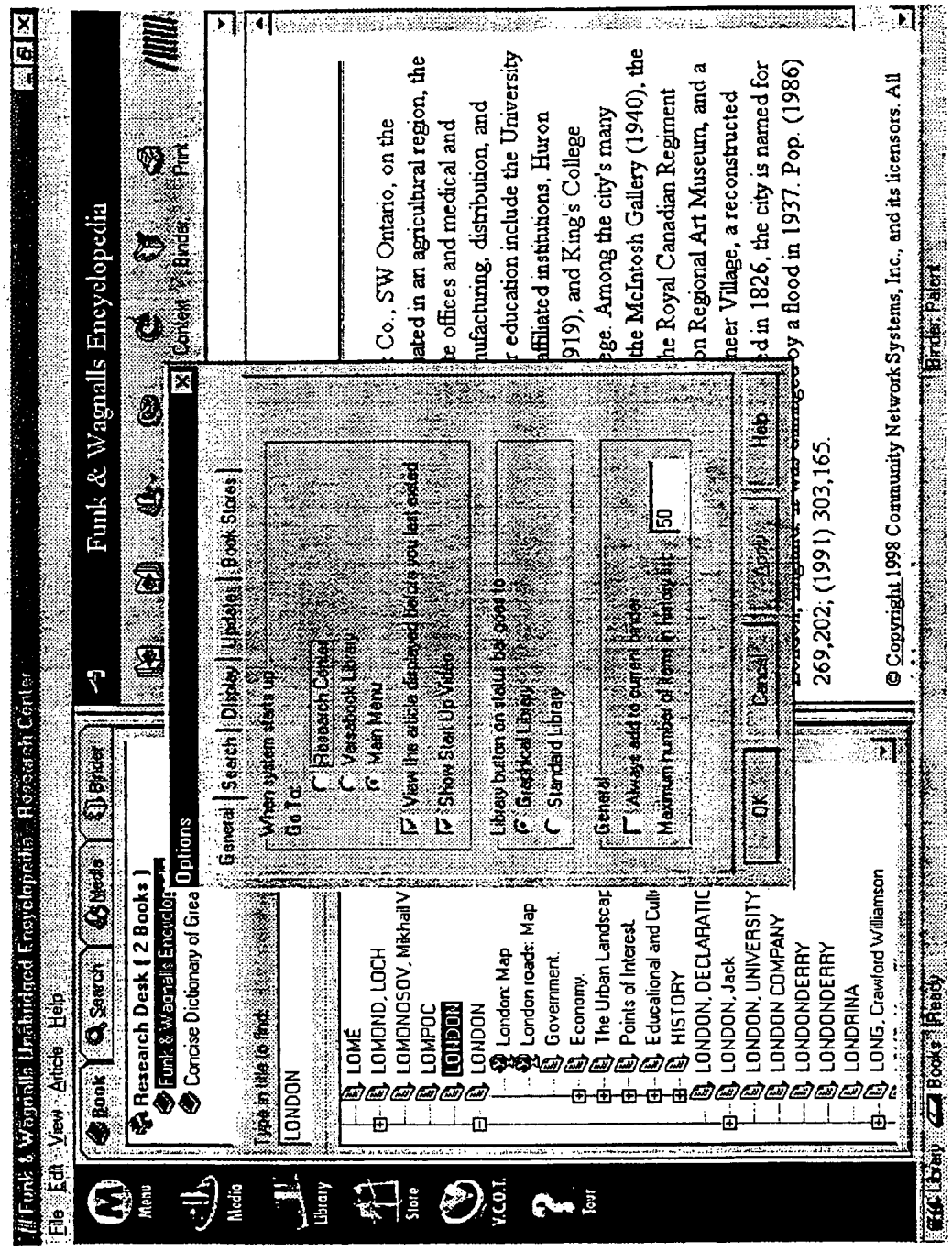
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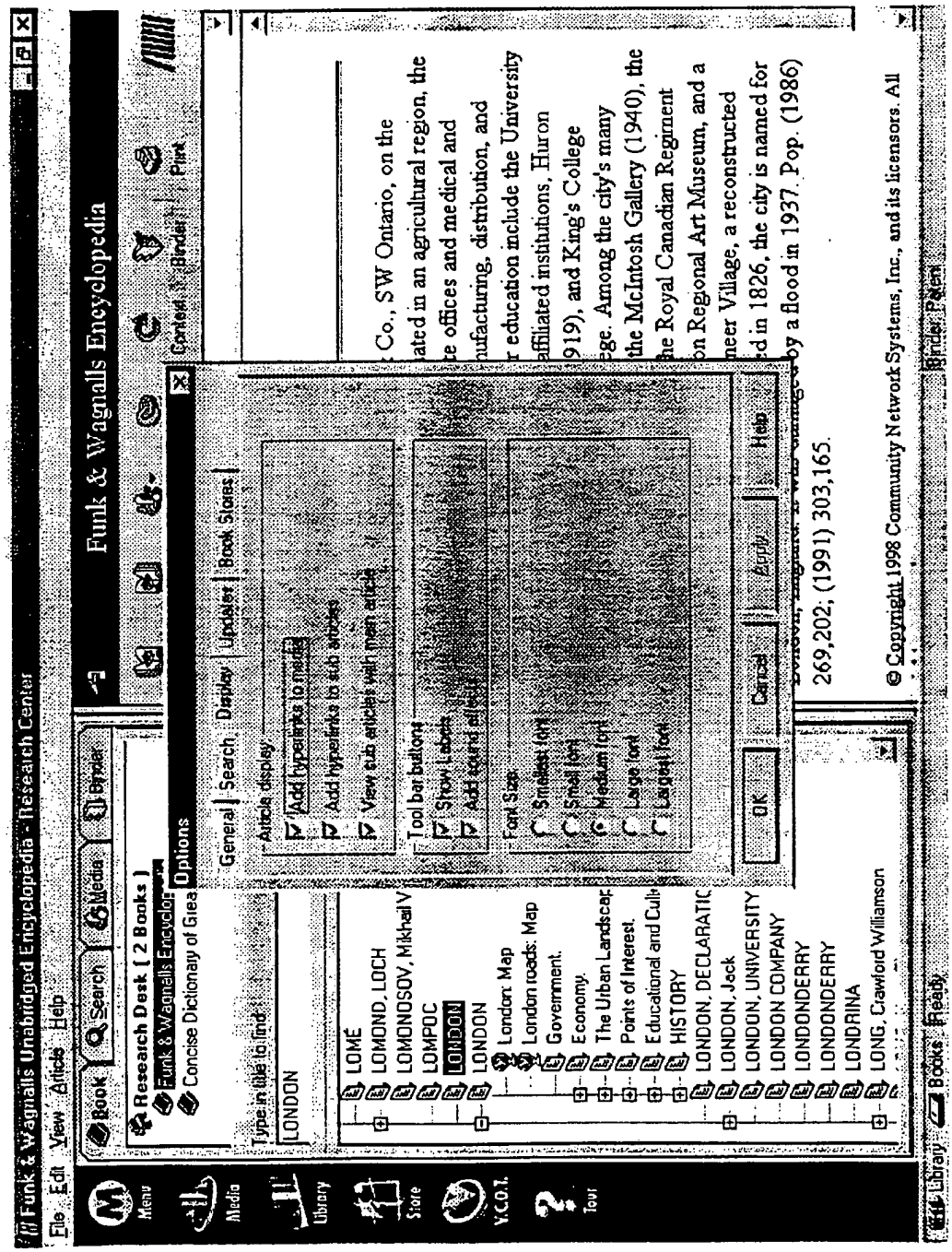

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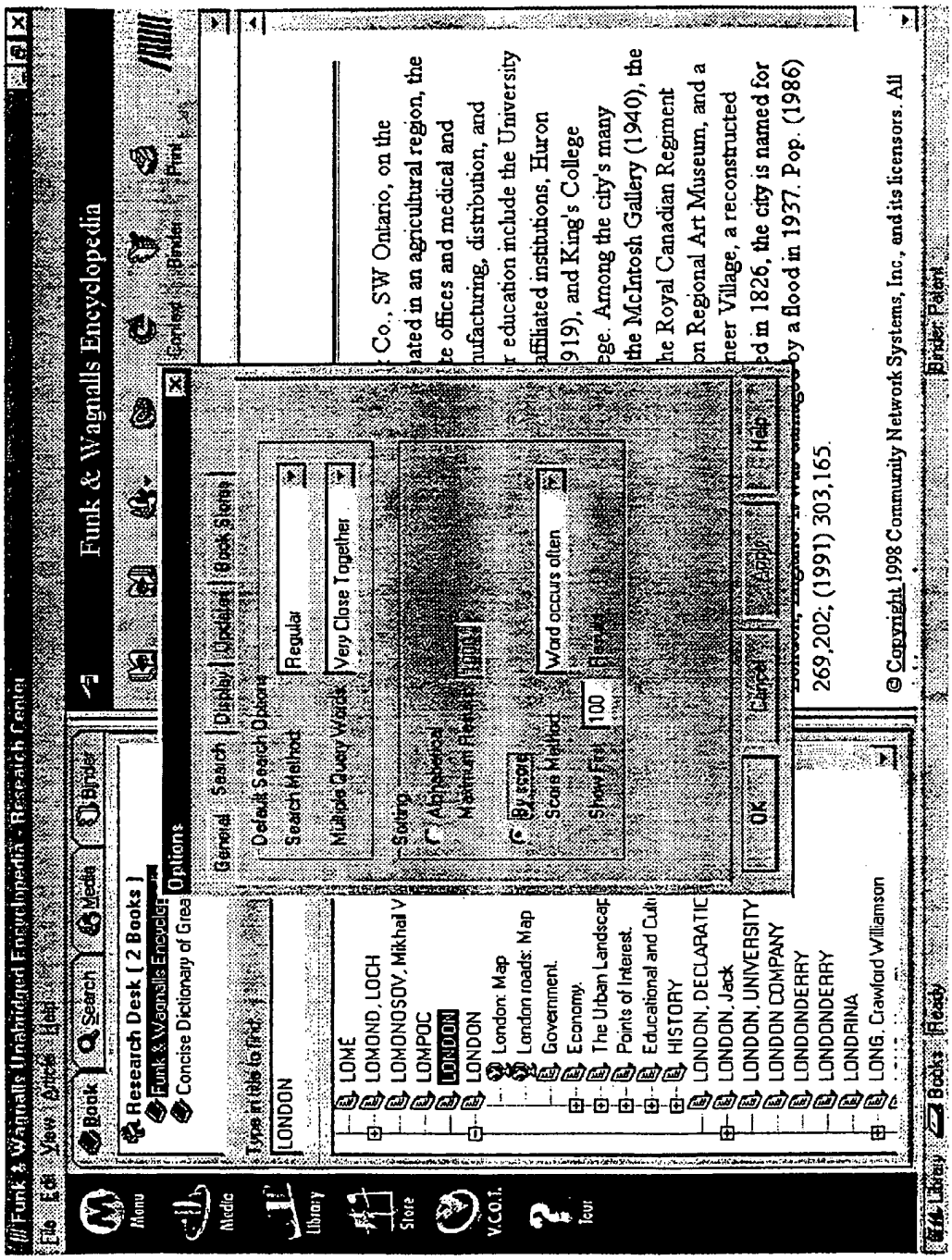
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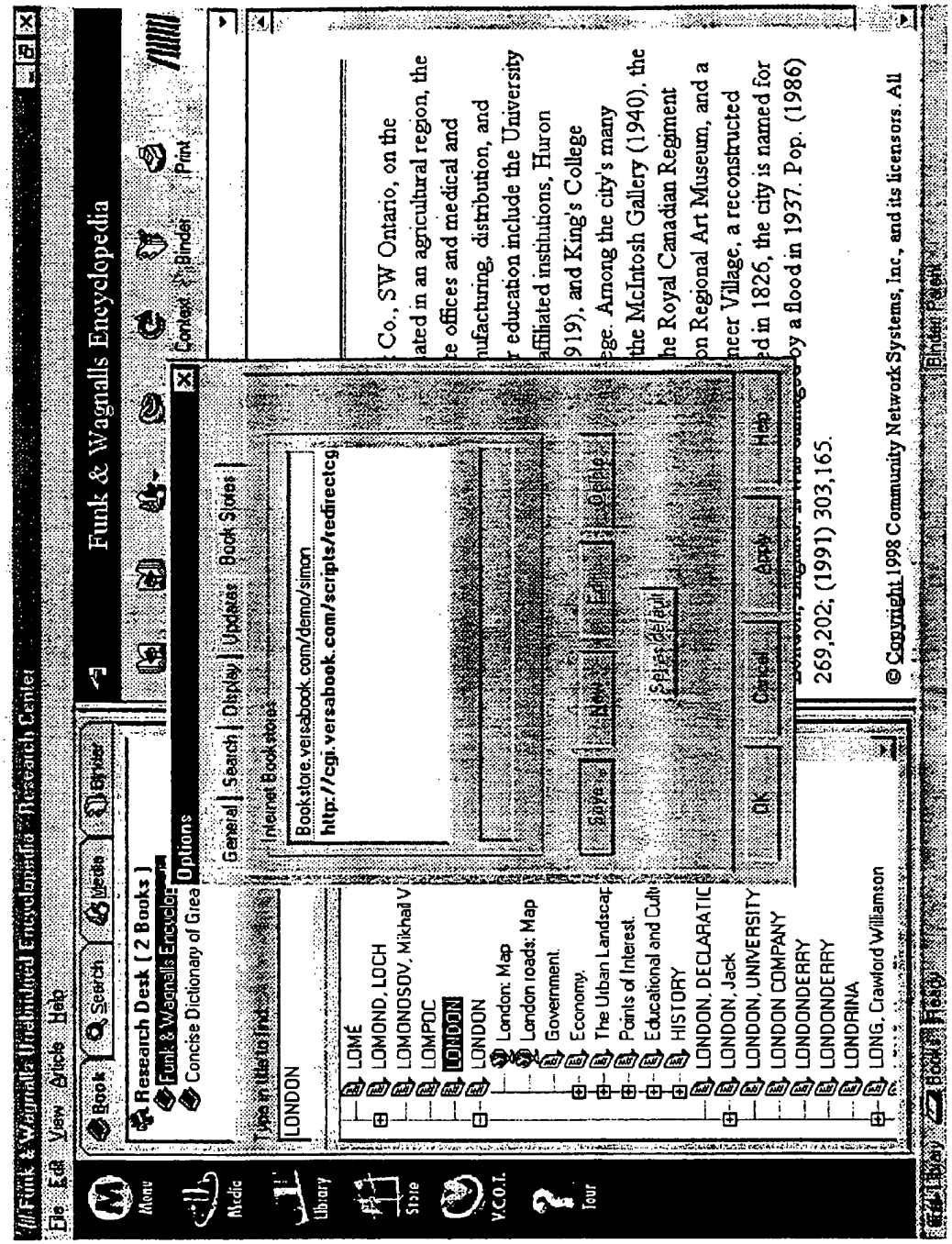
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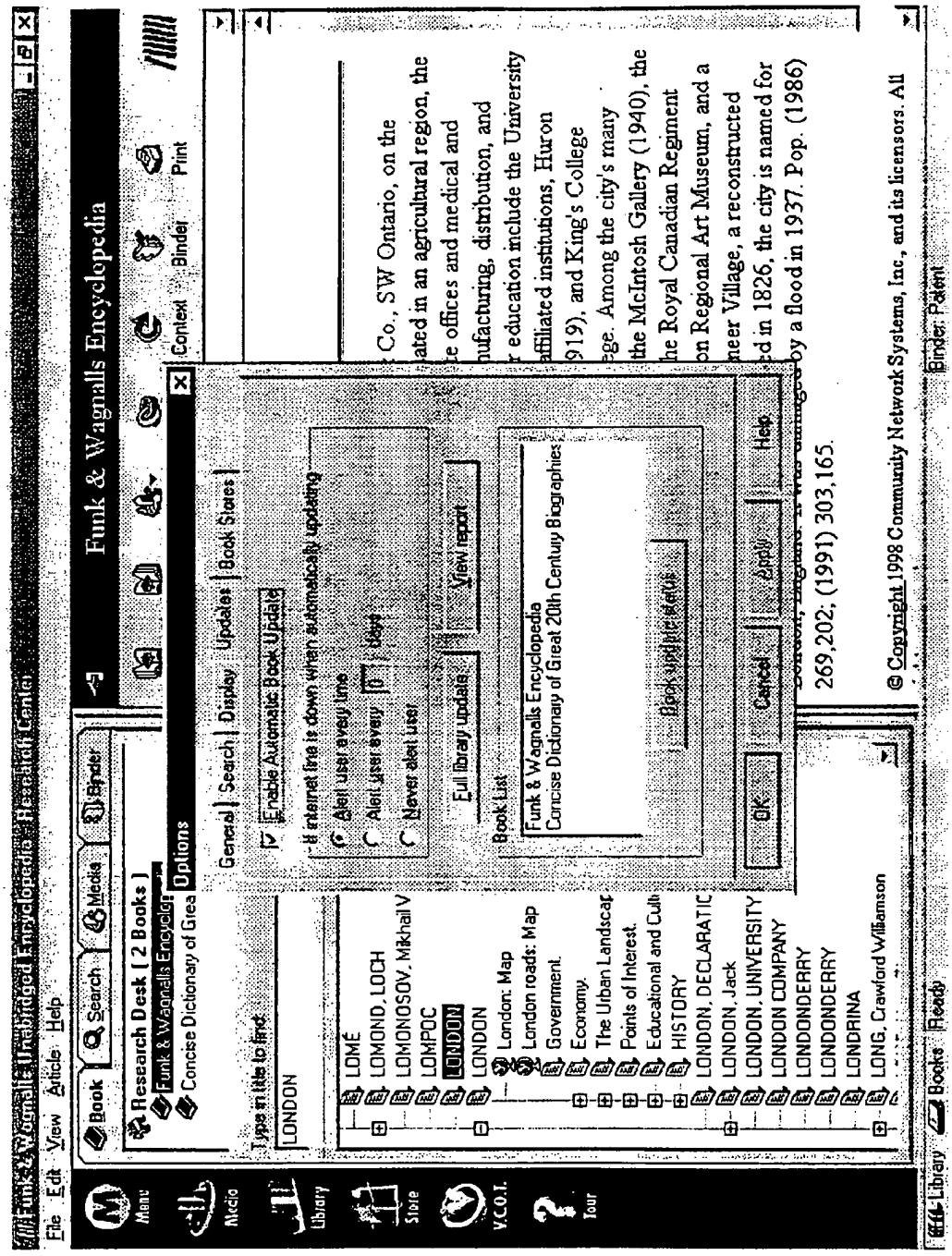
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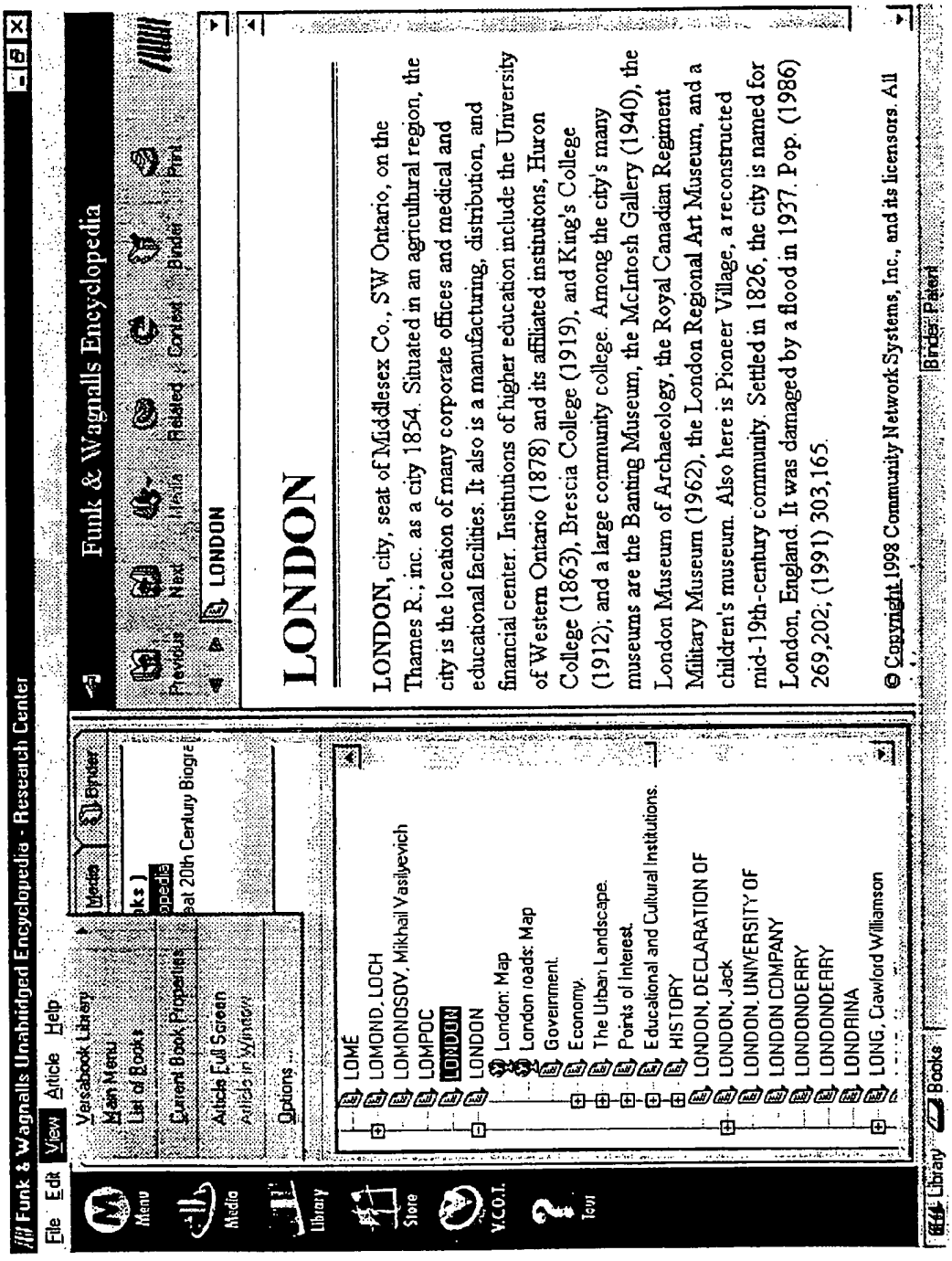
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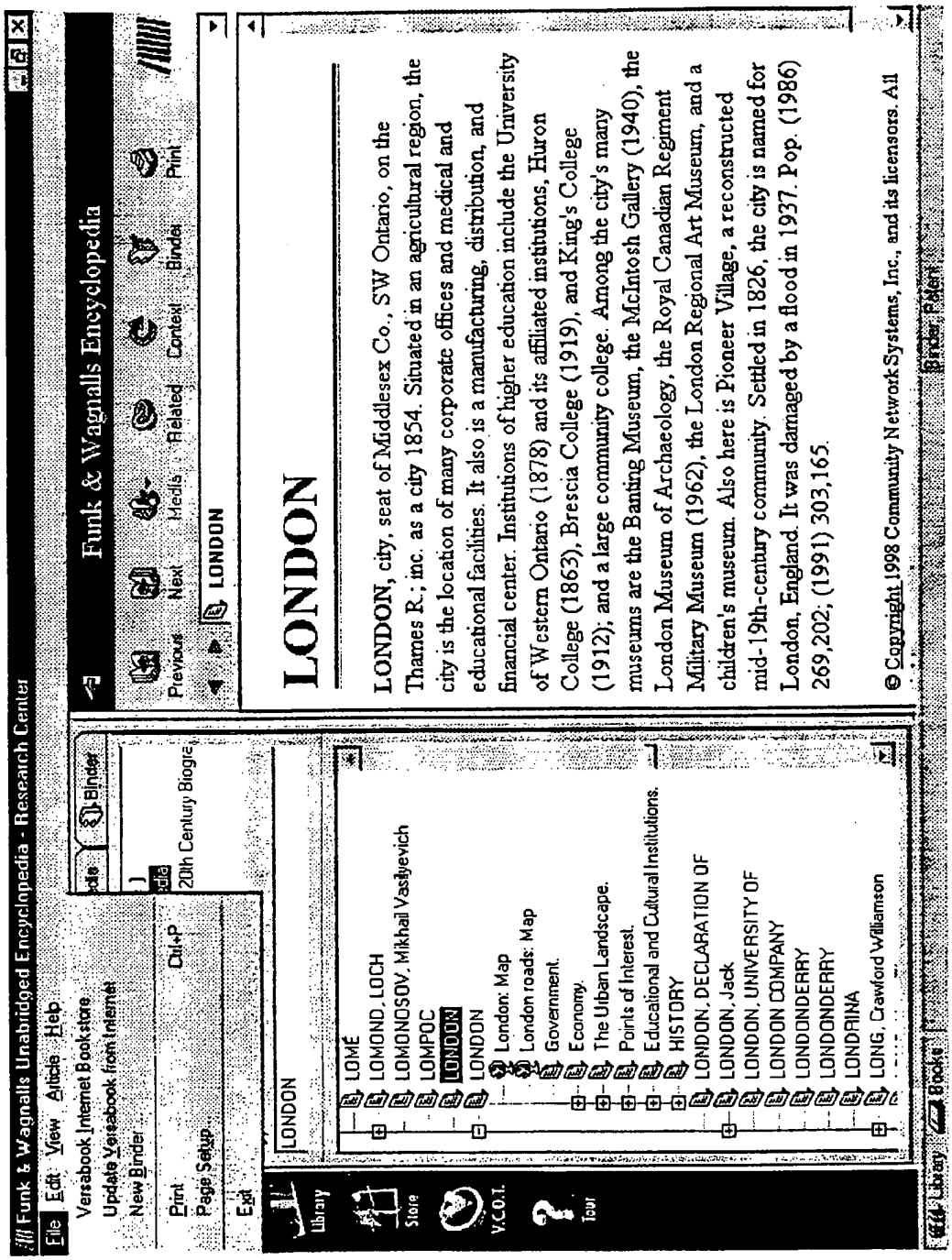
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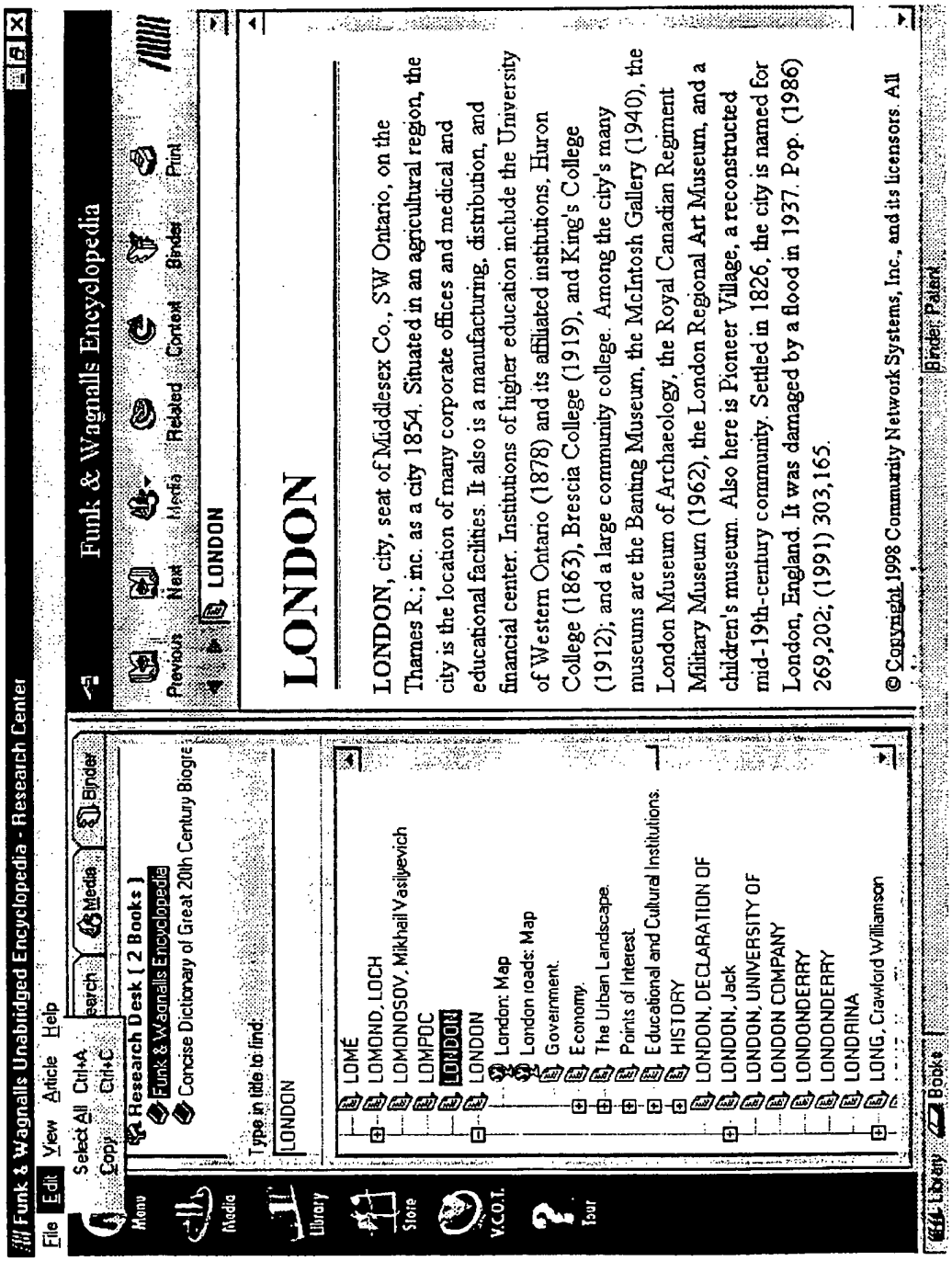
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Fig. 54

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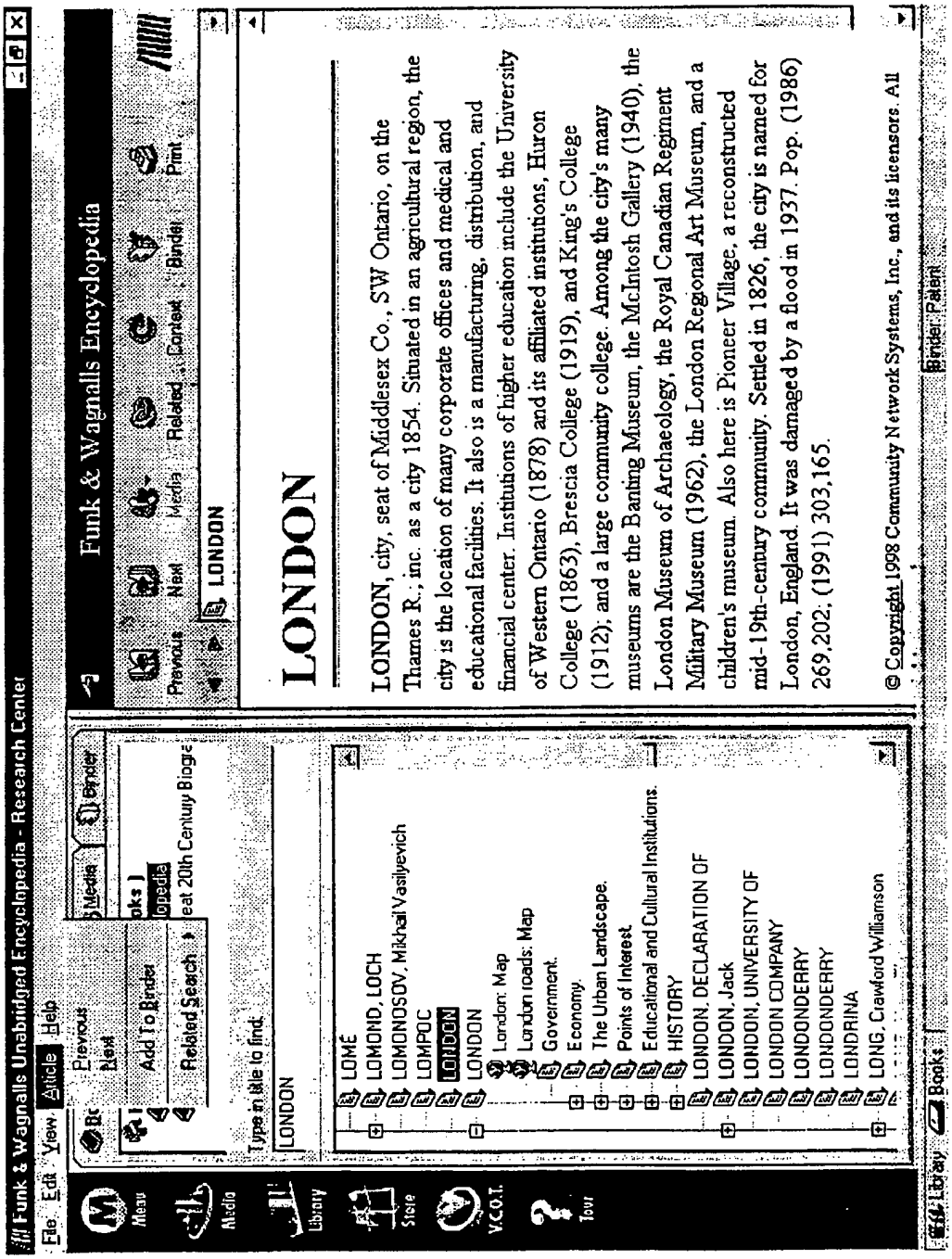

Fig.55

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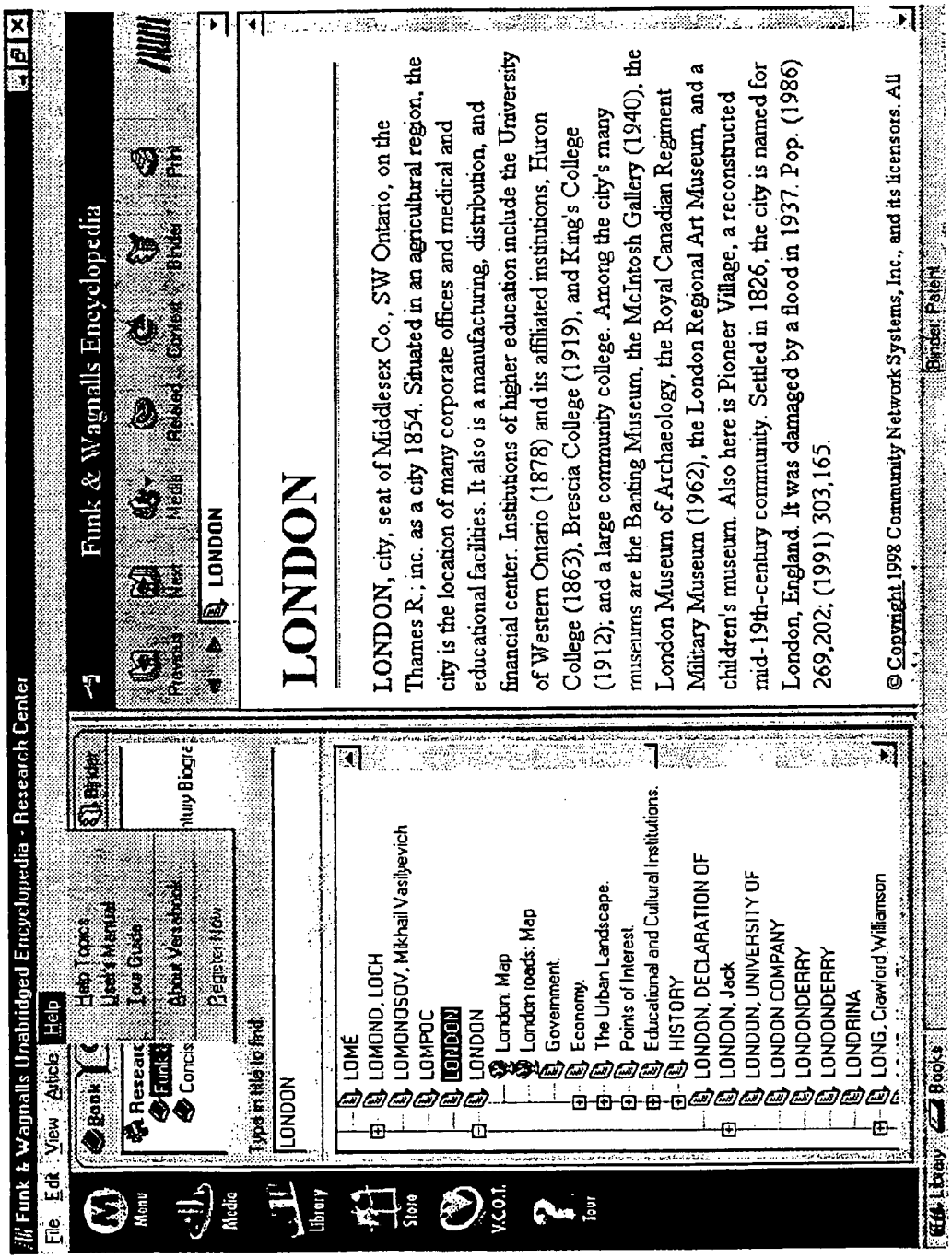
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Fig. 56

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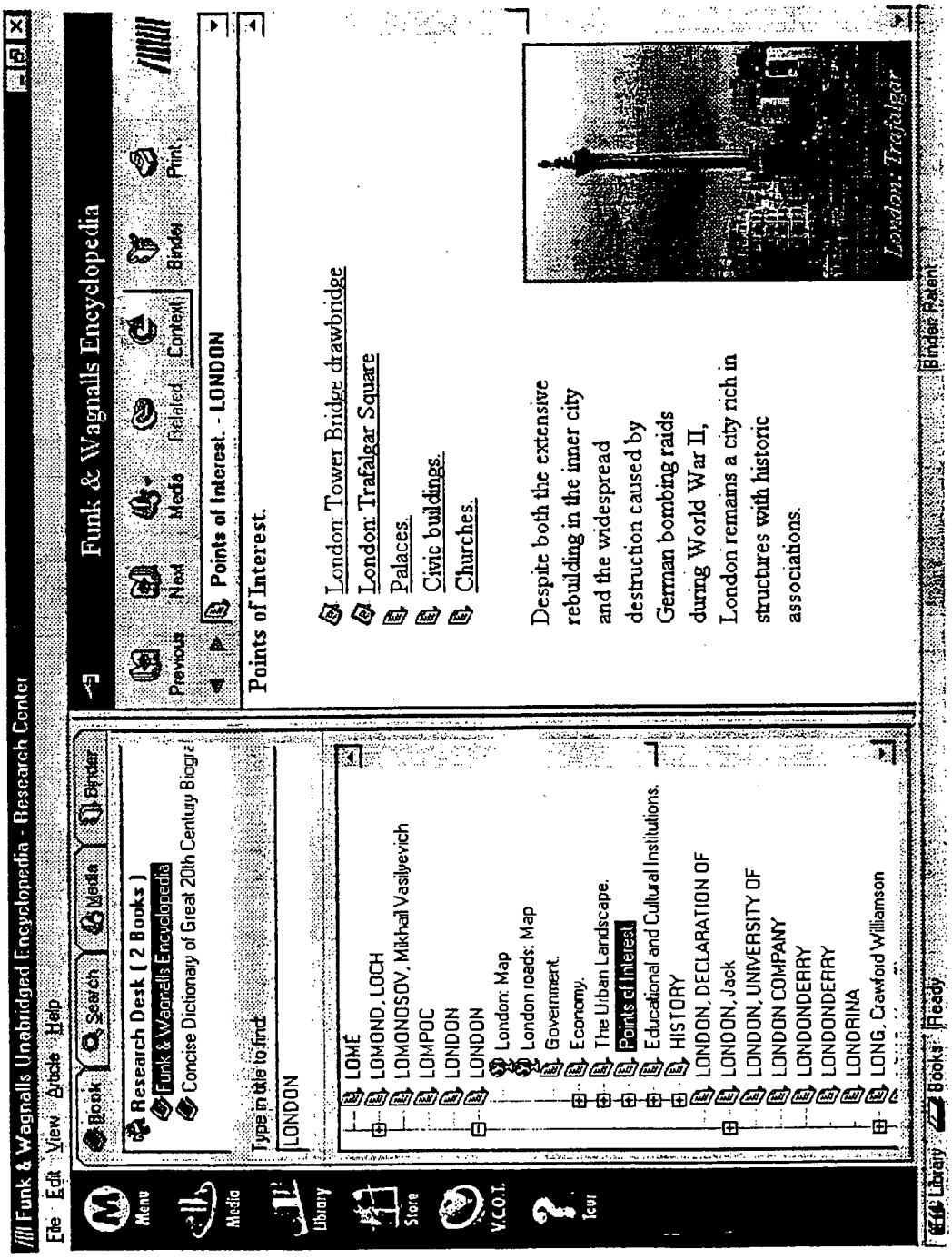
Fig. 57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London: Trafalgar Square
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Churches.
Despite both the extensive rebuilding in the inner city and the widespread destruction caused by German bombing raids during World War II, London remains a city rich in structures with historic associations.
London: Trafalgar
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Fig. 58

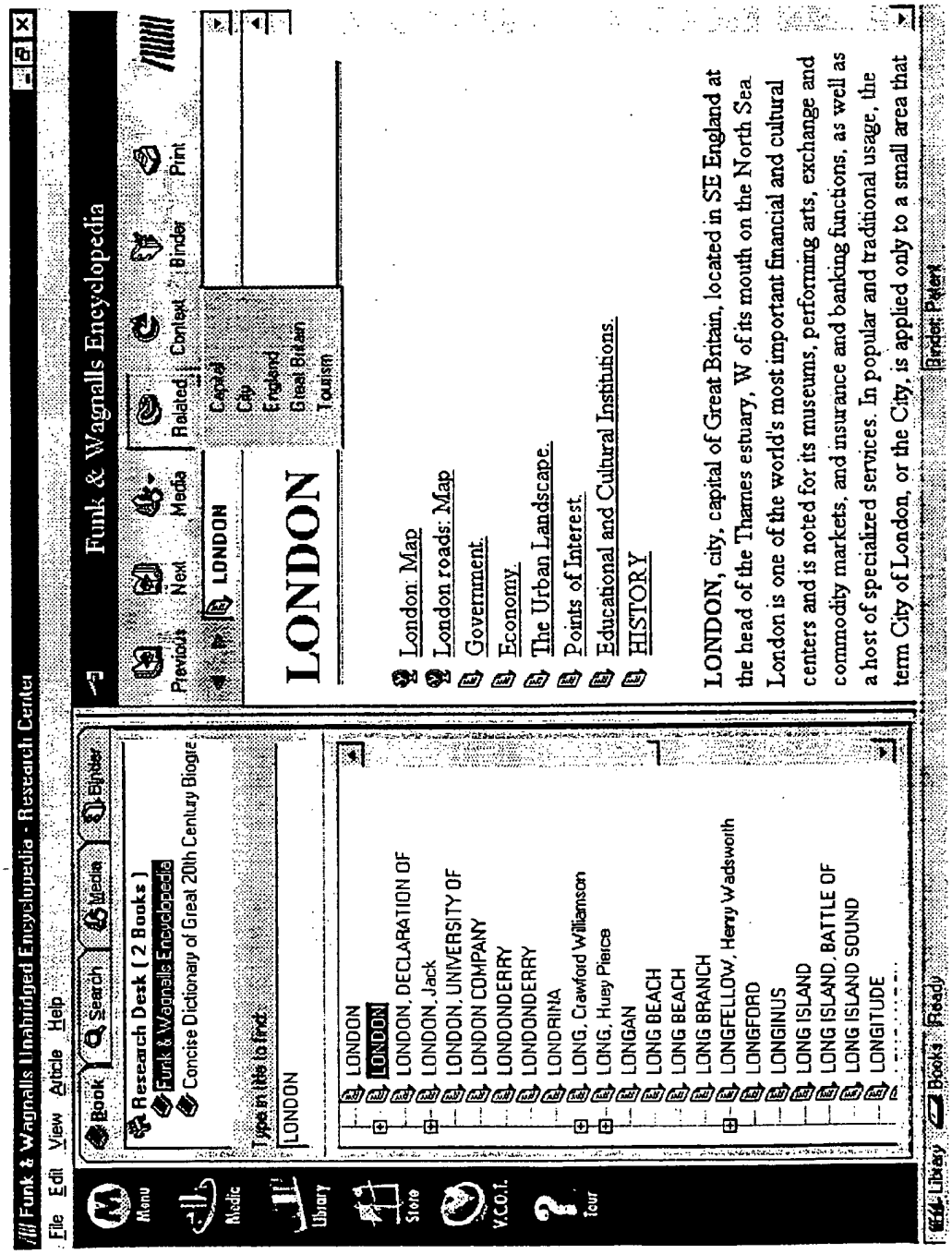
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Fig.59

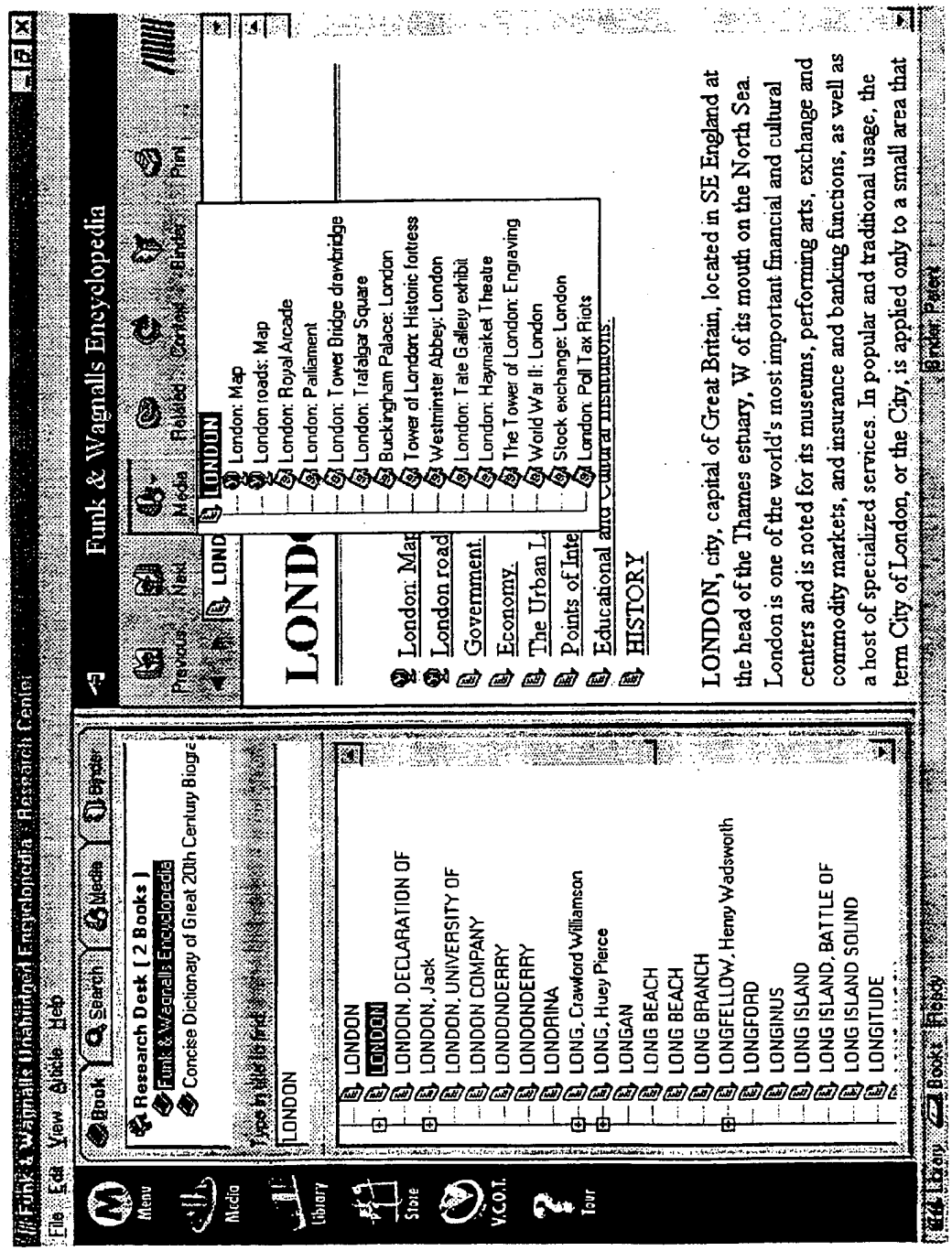
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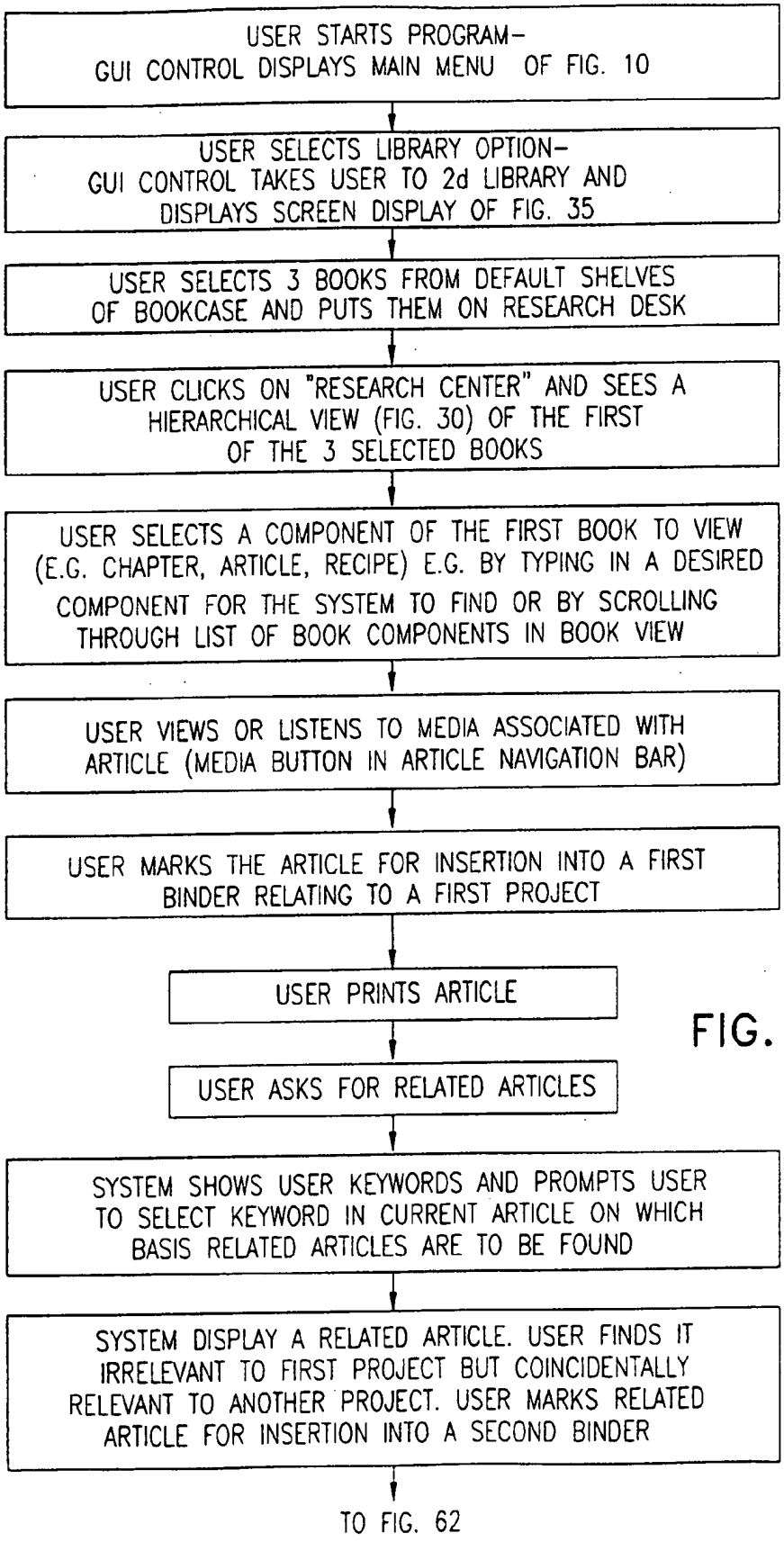
Fig.60


USER STARTS PROGRAM– GUI CONTROL DISPLAYS MAIN MENU OF FIG. 10
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USER SELECTS A COMPONENT OF THE FIRST BOOK TO VIEW (E.G. CHAPTER, ARTICLE, RECIPE) E.G. BY TYPING IN A DESIRED COMPONENT FOR THE SYSTEM TO FIND OR BY SCROLLING THROUGH LIST OF BOOK COMPONENTS IN BOOK VIEW
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USER PRINTS ARTICLE
USER ASKS FOR RELATED ARTICLES
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SYSTEM DISPLAY A RELATED ARTICLE. USER FINDS IT IRRELEVANT TO FIRST PROJECT BUT COINCIDENTALLY RELEVANT TO ANOTHER PROJECT. USER MARKS RELATED ARTICLE FOR INSERTION INTO A SECOND BINDER
TO FIG. 62

FIG. 61

FIG. 63

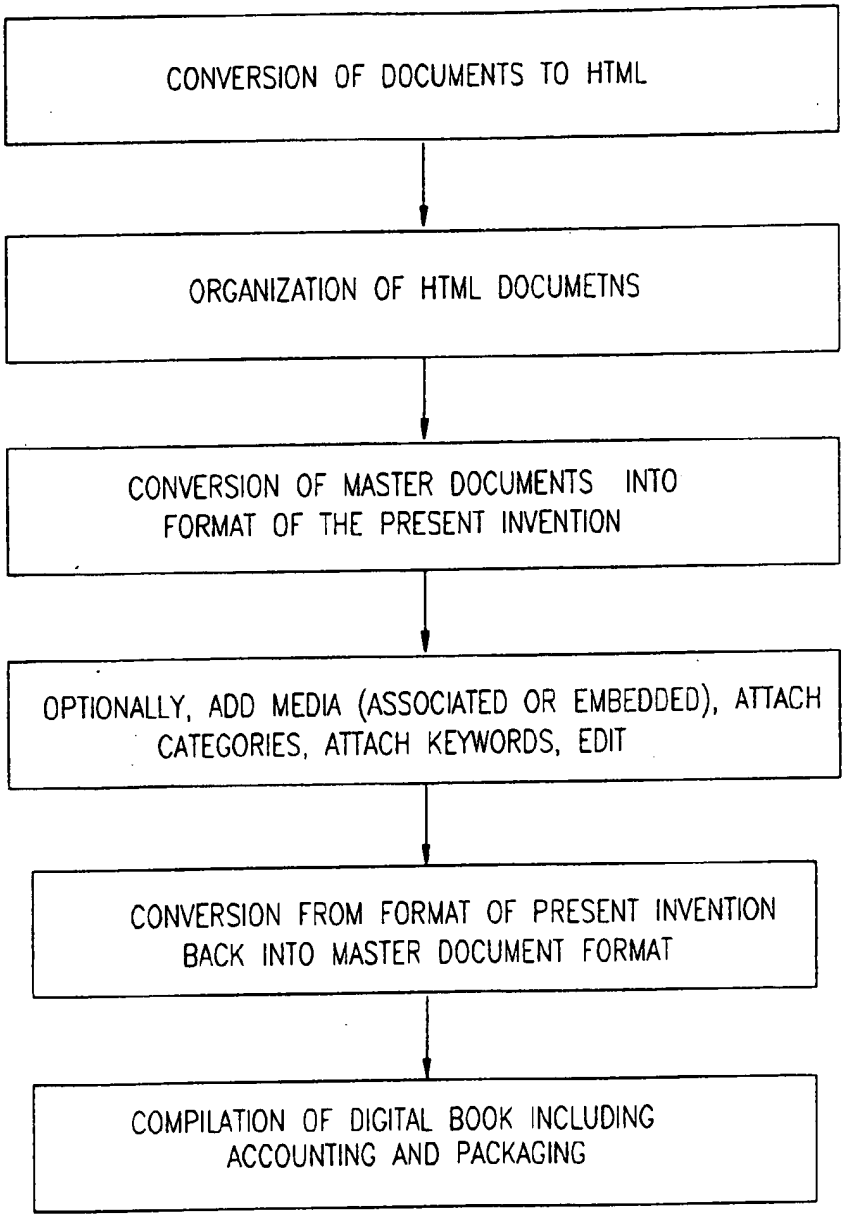
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FIG. 64

INTERNATIONAL SEARCH REPORT

Inter tional Application No
PC./IL 99/00372

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 821 315 A (IBM) 28 January 1998 (1998-01-28) the whole document ---	1-5,8, 10-15, 18,20
A	WO 98 08344 A (SACHS JAMES ;VIRTUAL PRESS (US); POMEROY THOMAS W (US)) 26 February 1998 (1998-02-26) page 3, line 8 - line 18 page 14, line 29 -page 16, line 11 ---	1,4,5,8, 10,11, 14,15, 18,20
X	EP 0 530 678 A (IBM) 10 March 1993 (1993-03-10) abstract	10,20
A	page 12, line 17 - line 57 --- -/--	5-7, 15-17

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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